



STIC Search Report

EIC 1700

STIC Database Tracking Number: 178839

TO: Ardith Hertzog
Location: REM 9A20
Art Unit : 1754
February 8, 2006

Case Serial Number: 10/786,671

From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes

Claim 18

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: ARDITH E. HERTZOG Examiner #: 71465 Date: 2.7.06
Art Unit: 1754 Phone Number 30 2-1247 Serial Number: PCT US04-05645Mail Box and Bldg/Room Location: Rem 9A20 Results Format Preferred (circle): PAPER DISK E-MAIL
(Office)If more than one search is submitted, please prioritize searches in order of need. (doesn't matter)

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Per attached BIB DATA SHEET =>Inventors (please provide full names): 11Earliest Priority Filing Date: 11

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

786C

Please search for
 polyoxometalates
 of the attached
 cl. 18 -

SCIENTIFIC REFERENCE BR
 Sci & Tech Inf. Ctr
 FFR → R&D
 Pat & T.M. Office

Thank you,
 Ardith

Searcher: R. Fuller
 Searcher Phone #: _____
 Searcher Location: _____
 Date Searcher Picked Up: _____
 Date Completed: 2/8/06
 Searcher Prep & Review Time: 30
 Clerical Prep Time: _____
 Online Time: 38

TYPE OF SEARCH		VENDORS AND COST WHERE APPLICABLE	
NA Sequence (#)	STN	Questel/Orbit	Dr. Link
AA Sequence (#)	Dialog	Lexis/Nexis	Sequence Systems
Structure (#)	1	Fulltext	WWW/Internet
Bibliographic		Patent Family	Other (specify)
Litigation			
Fulltext			
Patent Family			
Other			



STIC Search Results Feedback Form

EIC 17000

Questions about the scope or the results of the search? Contact the EIC searcher or contact:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example. 1713

➤ Relevant prior art found, search results used as follows.

- 102 rejection
- 103 rejection
- Cited as being of interest.
- Helped examiner better understand the invention.
- Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- Foreign Patent(s)
- Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art not found:

- Results verified the lack of relevant prior art (helped determine patentability).
- Results were not useful in determining patentability or understanding the invention.

Comments:

=> file reg
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STRUCTURE FILE UPDATES: 6 FEB 2006 HIGHEST RN 873652-66-5
DICTIONARY FILE UPDATES: 6 FEB 2006 HIGHEST RN 873652-66-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

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*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS
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FILE COVERS 1907 - 8 Feb 2006 VOL 144 ISS 7
FILE LAST UPDATED: 7 Feb 2006 (20060207/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que

L36 14814 SEA FILE=REGISTRY ABB=ON 10549-76-5/CRN
 L43 112256 SEA FILE=REGISTRY ABB=ON (C(L)H(L)N(L)(FE OR V)(L)O)/ELS
 L44 743 SEA FILE=REGISTRY ABB=ON L36 AND L43
 L45 230 SEA FILE=REGISTRY ABB=ON L44 AND 20-90/O
 L46 1 SEA FILE=REGISTRY ABB=ON L45 AND 3/FE AND 1/P AND 9/W AND 37/O
 L47 6 SEA FILE=REGISTRY ABB=ON L45 AND 10/V AND 28/O
 L48 2 SEA FILE=REGISTRY ABB=ON L45 AND 1/P AND 2/V AND 10/MO AND 40/O
 L49 1 SEA FILE=REGISTRY ABB=ON L45 AND 1/P AND 3/FE AND 9/W AND 37/O
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 L52 1 SEA FILE=REGISTRY ABB=ON L44 AND 4/P AND 3/FE AND 4/P AND 30/W
 L53 11 SEA FILE=REGISTRY ABB=ON (L46 OR L47 OR L48 OR L49 OR L50) OR L52
 L54 49 SEA FILE=HCAPLUS ABB=ON L53
 L56 23 SEA FILE=HCAPLUS ABB=ON L54 AND (CAT/RL OR CATALYST?)
 L58 2 SEA FILE=HCAPLUS ABB=ON L54 AND (POLLUTION? OR TOXIC?)/SC, SX
 L59 23 SEA FILE=HCAPLUS ABB=ON L56 OR L58
 L60 2 SEA FILE=HCAPLUS ABB=ON L54 AND CONTAMIN?
 L61 23 SEA FILE=HCAPLUS ABB=ON L59 OR L60
 L64 6 SEA FILE=HCAPLUS ABB=ON L54 AND (COMPNS? OR COMPOSITION?)
 L65 24 SEA FILE=HCAPLUS ABB=ON L61 OR L64

Claim 8

11 structures

=> d 165 bib abs hitind hitstr 1-24

24 CA references

L65 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:999712 HCAPLUS

DN 141:427184

TI Compositions, materials incorporating the compositions, and methods of using the compositions and materials

IN Okun, Nelya; Hill, Craig L.

PA USA

SO U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004230086	A1	20041118	US 2004-786671	20040225
	WO 2005021435	A2	20050310	WO 2004-US5645	20040225
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
PRAI	US 2003-449892P	P	20030225		

application

US 2004-786671 A 20040225

AB Compns. that can protect and/or remove contaminants such as warfare agents from the environment in which people are operating are disclosed, as are materials incorporating the compns., and methods of use thereof. In one embodiment, the composition includes a metal nitrate selected from d-block metal nitrates and f-block metal nitrates and a metal salt having weakly bound counter anions. The metal of the metal salt having weakly bound counter anions is selected from a d-block metal and an f-block metal. Another embodiment of the composition includes a first polyoxometalate having a first metal selected from a d-block metal and an f-block metal and a second polyoxometalate having a second metal selected from a d-block metal and an f-block metal, the first metal being an open coordinate site of the first polyoxometalate. In addition, the first metal has a nitrate terminal ligand.

IC ICM A62D003-00
ICS C11D001-00

INCL 588205000

CC 59-2 (Air Pollution and Industrial Hygiene)

Section cross-reference(s): 4

IT Biological warfare agents
Chemical warfare agents
Coating materials
Environmental pollution control
Oxidation catalysts
Powders
Textiles

(catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT Aldehydes, processes
RL: ADV (Adverse effect, including toxicity); CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT Oxidation
(catalytic; catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT Drug delivery systems
(topical; catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT Heteropoly acids
RL: CAT (Catalyst use); USES (Uses)
(tungstates, complexes with iron, silver, and/or cerium; catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT 7727-37-9D, Nitrogen, compds.
RL: ADV (Adverse effect, including toxicity); CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); BIOL (Biological study); OCCU (Occurrence); PROC (Process)
(aliphatic; catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT 7440-33-7D, Tungsten, heteropoly compds. containing, complexes with iron
59858-44-5 134360-58-0 795308-36-0
796042-78-9

RL: CAT (Catalyst use); USES (Uses)
(as polyoxometalate; catalytic compns. for removal of contaminants such as warfare agents, and materials

incorporating these compns.)

IT 50-00-0, Formaldehyde, processes 57-12-5D, Cyanide, compds. 74-93-1, Methyl mercaptan, processes 75-07-0, Acetaldehyde, processes 75-18-3, Dimethyl sulfide 75-44-5, Phosgene 75-50-3, Trimethylamine, processes 79-09-4, Propionic acid, processes 100-42-5, Styrene, processes 107-92-6, Butyric acid, processes 109-52-4, Valeric acid, processes 110-81-6, Diethyl disulfide 110-86-1, Pyridine, processes 352-93-2, Diethyl sulfide 503-74-2, Iso-valeric acid 505-60-2, Mustard gas 624-92-0 630-08-0, Carbon monoxide, processes 693-07-2, 2-Chloroethyl ethyl sulfide 7440-38-2D, Arsenic, compds. 7664-41-7, Ammonia, processes 7704-34-9D, Sulfur, compds. 7783-06-4, Hydrogen sulfide, processes

RL: ADV (Adverse effect, including toxicity); CPS (Chemical process); PEP (Physical, engineering or chemical process); POL (Pollutant); REM (Removal or disposal); BIOL (Biological study); OCCU (Occurrence); PROC (Process)

(catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT 3251-23-8, Copper (II) nitrate 7439-89-6D, Iron, complexes with heteropolytungstates 7440-22-4D, Silver, complexes with heteropolytungstates 7440-45-1D, Cerium, complexes with heteropolytungstates 10108-73-3, Cerium (III) nitrate 10141-05-6, Cobalt (II) nitrate 10421-48-4, Iron (III) nitrate 13093-17-9 13138-45-9, Nickel (II) nitrate 13770-18-8, Copper (II) perchlorate 34946-82-2, Copper (II) trifluoromethanesulfonate 38465-60-0, Copper (II) tetrafluoroborate

RL: CAT (Catalyst use); USES (Uses)

(catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

IT 59858-44-5 134360-58-0 795308-36-0

796042-78-9

RL: CAT (Catalyst use); USES (Uses)

(as polyoxometalate; catalytic compns. for removal of contaminants such as warfare agents, and materials incorporating these compns.)

RN 59858-44-5 HCAPLUS

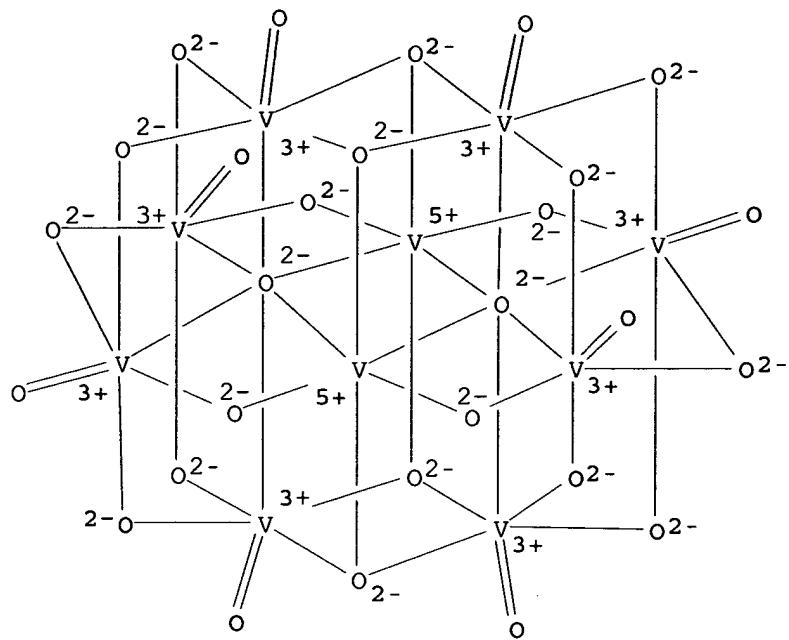
CN 1-Butanaminium, N,N,N-tributyl-, tetradeca- μ -oxo-tetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (6:1) (9CI) (CA INDEX NAME)

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CRN 12397-12-5

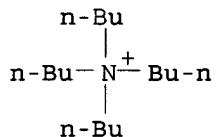
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CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N



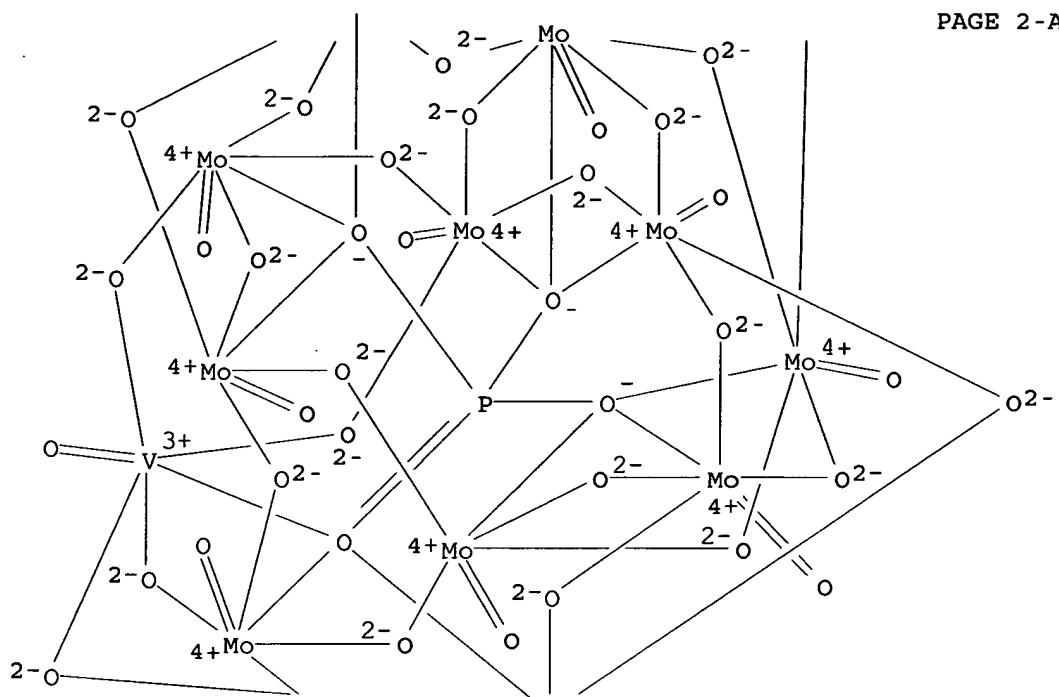
RN 134360-58-0 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, (heptadeca- μ -oxodecaoxodecamolybdate)hepta- μ -oxodioxo[μ 12-[phosphato(3-)- κ O: κ O: κ O': κ O': κ O': κ O'':.kappa.O'': κ O'': κ O'': κ O'': κ O'': κ O'']]divanadate(5-) (5:1) (9CI) (CA INDEX NAME)

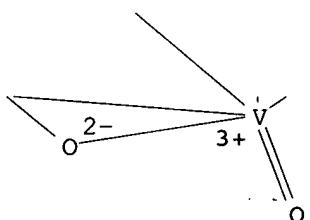
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CRN 58071-93-5
CMF Mo10 O40 P V2
CCI CCS

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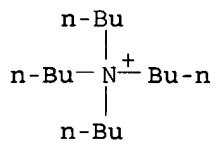


PAGE 3-A



CM 2

CRN 10549-76-5
CMF C16 H36 N



RN 795308-36-0 HCAPLUS
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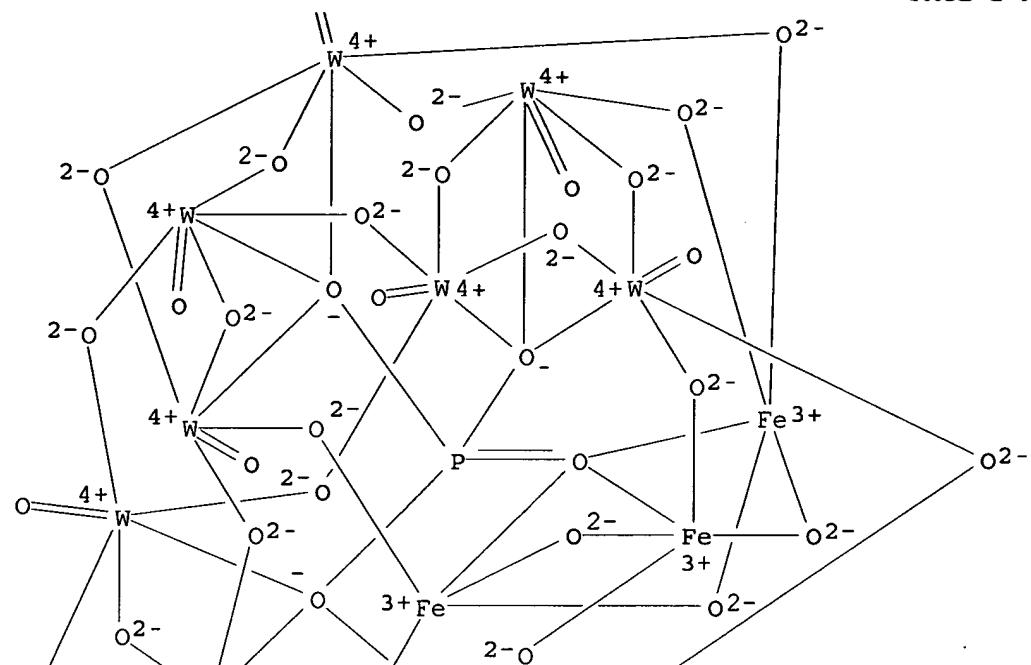
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CCI CCS

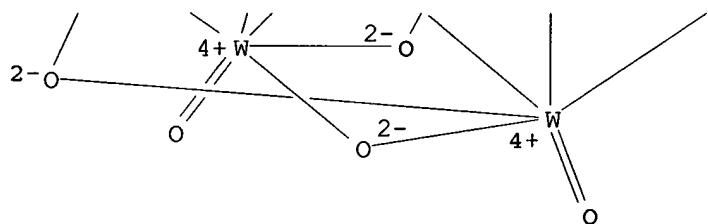
PAGE 1-A

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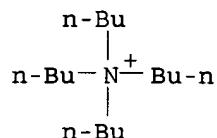
PAGE 2-A



PAGE 3-A



CM 2

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CMF C16 H36 N

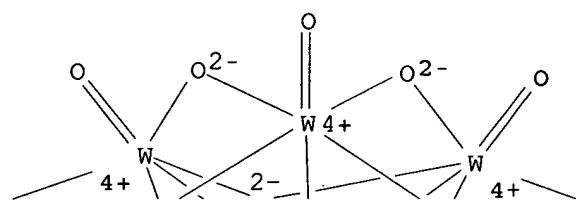
RN 796042-78-9 HCPLUS
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 oxooctadecaoxobis[μ 9-[phosphato(3-)- κ O: κ O: κ O: κ O
 ': κ O': κ O'': κ O'': κ O'': κ O'']]octadecatungsta

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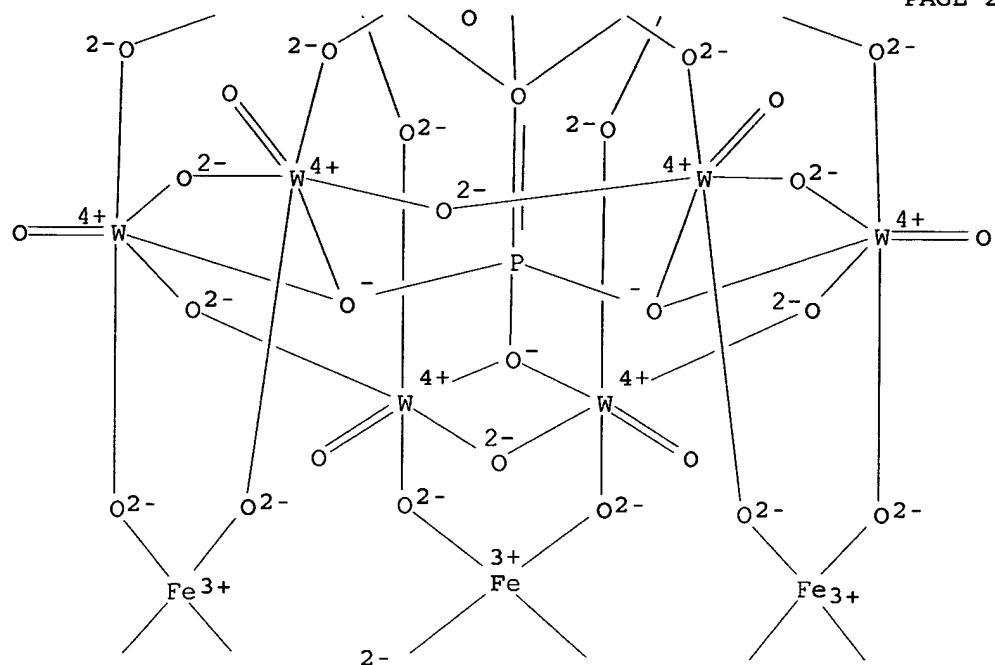
CM 1

CRN 796042-77-8
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CCI CCS

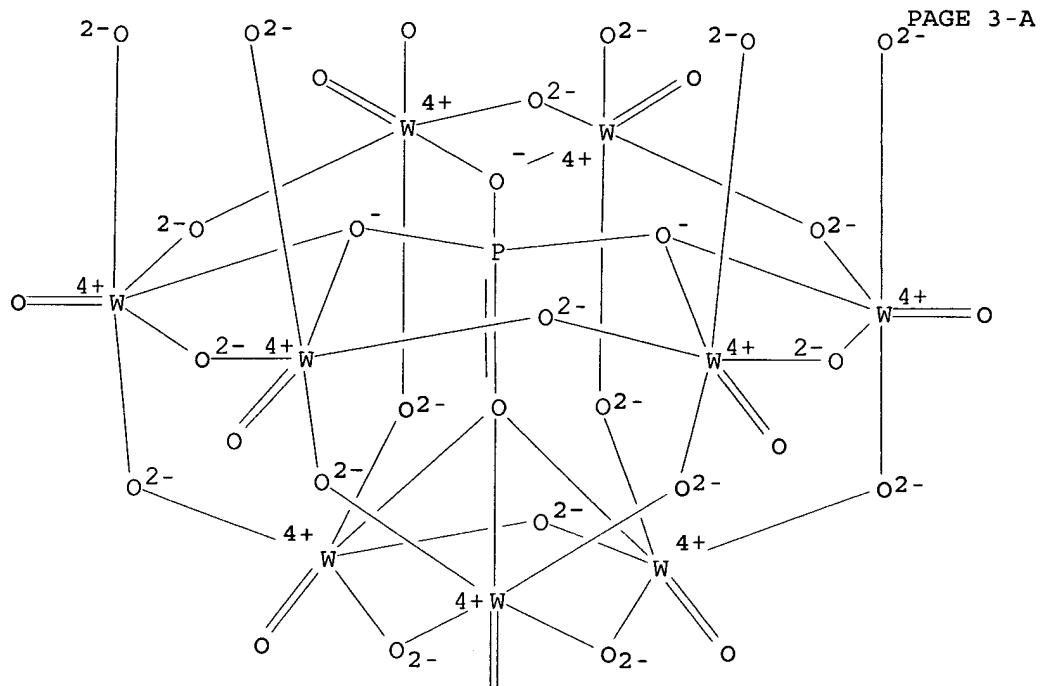
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PAGE 2-A



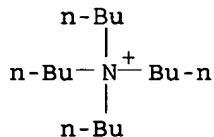
PAGE 3-A



PAGE 4-A

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CM 2

CRN 10549-76-5
CMF C16 H36 N

L65 ANSWER 2 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:913046 HCAPLUS

DN 139:392437

TI Materials for degrading **contaminants**IN Okun, Nelya; Hill, Craig L.

PA Emory University, USA

SO PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003094977	A2	20031120	WO 2003-US14375	20030505
	WO 2003094977	A3	20040708		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2005159307	A1	20050721	US 2003-512336	20030505
PRAI	US 2002-377740P	P	20020503		
	WO 2003-US14375	W	20030505		
AB	Embodiments of the present invention includes compns. , materials including the compns. , methods of using the compns. , and methods of degrading contaminants . The composition can include a polyoxometalate/cationic silica material. In addition, the compns. can be made of a polyoxometalate/cationic silica material, a copper (II) salt having a weakly bound anion, and a nitrate salts. Further, the compns. can be made of a polyoxometalate/cationic silica material, a copper (II) salt having a weakly bound anion, a compound selected from tetraethylammonium (TEA) nitrate, tetra-n-butylammonium (TBA) nitrate, and combinations thereof.				
IC	ICM A61L				
CC	4-3 (Toxicology)				

IT Infection
 (anthrax; materials for degrading contaminants)

IT Biological warfare agents
 Chemical warfare agents
 Decontamination
 (materials for degrading contaminants)

IT Heteropoly acids
 RL: NUU (Other use, unclassified); USES (Uses)
 (materials for degrading contaminants)

IT Aldehydes, reactions
 Halogen compounds
 RL: RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
 (materials for degrading contaminants)

IT Nitrates, reactions
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (transition metal; materials for degrading contaminants)

IT 625455-59-6 625455-61-0 625830-47-9 625830-48-0 625830-49-1
 625830-52-6
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (cationic catalyst support; materials for degrading contaminants)

IT 173358-70-8, Bindzil CAT
 RL: NUU (Other use, unclassified); USES (Uses)
 (materials for degrading contaminants)

IT 3251-23-8, Cupric nitrate 10141-05-6, Cobalt nitrate 10421-48-4,
 Ferric nitrate 12200-88-3 13138-45-9, Nickel nitrate 13770-18-8,
 Cupric perchlorate 34946-82-2, Cupric triflate 38465-60-0, Cupric tetrafluoroborate 73131-99-4 625830-46-8 625830-51-5
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
 (materials for degrading contaminants)

IT 59858-44-5P 134360-58-0P 194925-14-9P
 RL: NUU (Other use, unclassified); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
 (materials for degrading contaminants)

IT 1941-26-0, Tetraethylammonium nitrate 1941-27-1, Tetrabutylammonium nitrate
 RL: NUU (Other use, unclassified); REM (Removal or disposal); PROC (Process); USES (Uses)
 (materials for degrading contaminants)

IT 625830-54-8
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (materials for degrading contaminants)

IT 50-00-0, Formaldehyde, reactions 74-93-1, Methyl mercaptan, reactions
 75-07-0, Acetaldehyde, reactions 75-18-3, Dimethyl sulfide 75-44-5,
 Phosgene 75-50-3, Trimethylamine, reactions 79-09-4, Propionic acid, reactions
 100-42-5, Styrene, reactions 107-44-8, Sarin 107-92-6,
 n-Butyric acid, reactions 109-52-4, n-Valeric acid, reactions
 110-01-0, Tetrahydrothiophene 110-81-6, Diethyl disulfide 110-86-1,
 Pyridine, reactions 352-93-2, Diethyl sulfide 503-74-2, Isovaleric acid 624-92-0, Dimethyl disulfide 630-08-0, Carbon monoxide, reactions
 693-07-2, 2-Chloroethyl ethyl sulfide 7440-38-2D, Arsenic, compds.
 7664-41-7, Ammonia, reactions 7704-34-9D, Sulfur, compds. 7727-37-9D,
 Nitrogen, compds. 7783-06-4, Hydrogen sulfide, reactions
 RL: RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
 (materials for degrading contaminants)

IT 59858-44-5P 134360-58-0P

RL: NUU (Other use, unclassified); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses) (materials for degrading contaminants)

RN 59858-44-5 HCAPLUS

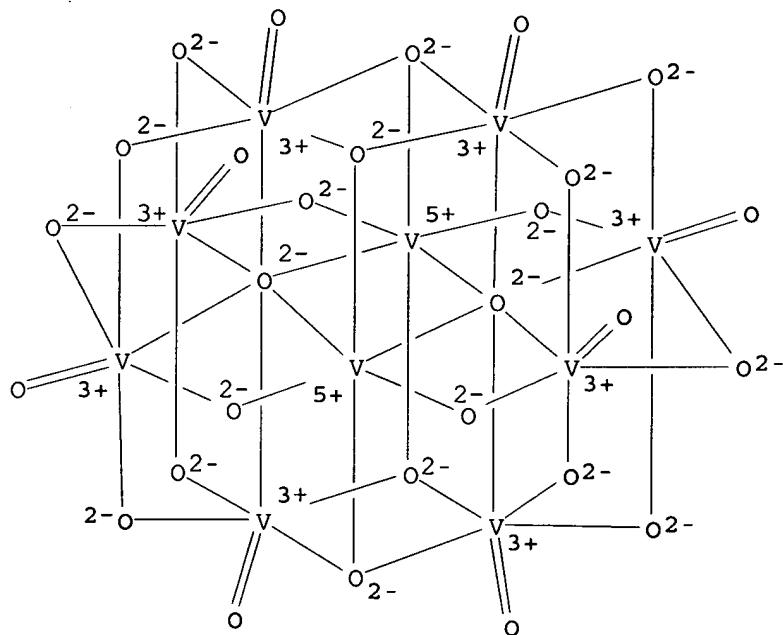
CN 1-Butanaminium, N,N,N-tributyl-, tetradeca- μ -oxo-tetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (6:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

CMF O28 V10

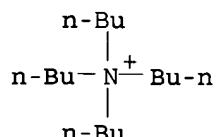
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N



RN 134360-58-0 HCAPLUS

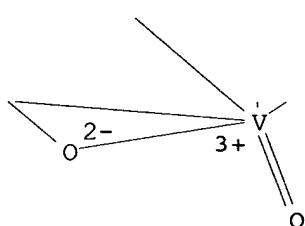
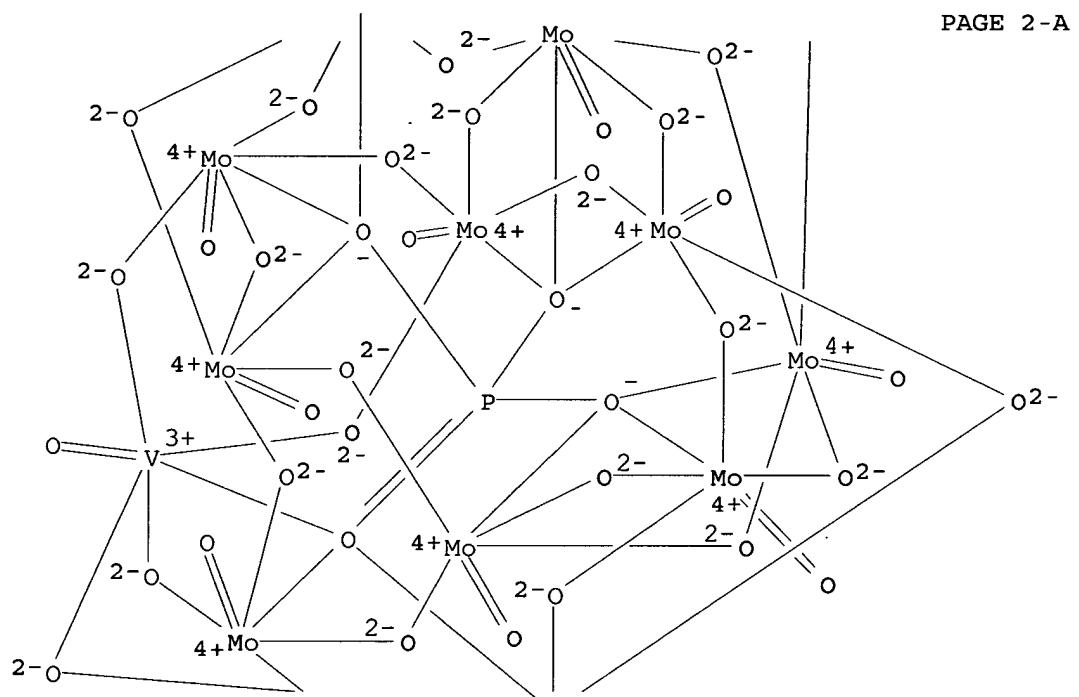
CN 1-Butanaminium, N,N,N-tributyl-, (heptadeca- μ -oxodecaoxodecamolybdate)hepta- μ -oxodioxo[μ 12-[phosphato(3-) - κ O: κ O: κ O': κ O': κ O'': κ O'':.kappa

.O'':κO'':κO'':κO'':κO'']]divanadate(5-) (5:1)
(9CI) (CA INDEX NAME)

CM 1

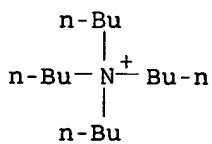
CRN 58071-93-5
CMF Mo10 O40 P V2
CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



CM 2

CRN 10549-76-5
CMF C16 H36 N



L65 ANSWER 3 OF 24 HCPLUS COPYRIGHT 2006 ACS on STN
AN 2003:826766 HCPLUS
DN 139:308108
TI **Catalysts** for oxidizing olefins and oxidation method using them with high yield
IN Furuya, Masahiko; Liu, Yan-Yong
PA Asahi Kasei Corporation, Japan; Noguchi Research Institute
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003299964	A2	20031021	JP 2002-108337	20020410
PRAI JP 2002-108337		20020410		

AB The invention relates to oxidation **catalysts** $\text{Am}(\text{MxOy})$ (A = counter cation; M = Group V, VI element; m = 1-16; x = 2-64; y = 4-196). Thus, cyclooctene was oxidized in the presence of O and $[(\text{n-Bu})_4\text{N}]_2(\text{W6O19})$ to give cyclooctene oxide with selectivity 92.3 mol%.

IC ICM B01J031-34
 ICS B01J031-36; C07C027-00; C07C029-50; C07C035-18; C07C045-34;
 C07C049-603; C07D301-06; C07D303-04; C07B061-00
CC 35-2 (Chemistry of Synthetic High Polymers)
ST oxidn **catalyst** olefin epoxidn isopoly acid; tetrabutylammonium hexatungstate oxidn **catalyst** cyclooctene oxide
IT Epoxidation
 Oxidation
 (isopoly acid **catalysts** for oxidizing olefins)
IT Alkenes, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (isopoly acid **catalysts** for oxidizing olefins)
IT Epoxidation **catalysts**
 Oxidation **catalysts**
 (isopoly acid; isopoly acid **catalysts** for oxidizing olefins)
IT Acids, preparation
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
 (isopoly, oxidation **catalysts**; isopoly acid **catalysts** for oxidizing olefins)
IT Silsesquioxanes
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
 (silicate-, fixing **catalyst** on; isopoly acid **catalysts** for oxidizing olefins)
IT Silicates, preparation
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
 (silsesquioxane-, fixing **catalyst** on; isopoly acid **catalysts** for oxidizing olefins)
IT 612035-45-7P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(fixing catalyst on; isopoly acid catalysts for oxidizing olefins)

IT 286-20-4P, 7-Oxabicyclo[4.1.0]heptane 286-62-4P, Cyclooctene oxide
RL: IMF (Industrial manufacture); PREP (Preparation)
(isopoly acid catalysts for oxidizing olefins)

IT 110-83-8, Cyclohexene, reactions 931-88-4, Cyclooctene 7782-44-7,
Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(isopoly acid catalysts for oxidizing olefins)

IT 12027-67-7, Hexaammonium heptamolybdate
RL: CAT (Catalyst use); USES (Uses)
(oxidation catalyst; isopoly acid catalysts for oxidizing olefins)

IT 12329-09-8P 12329-10-1P, Bis(tetrabutylammonium) hexatungstate
12390-22-6P, Bis(tetrabutylammonium) hexamolybdate 59054-50-1P
64444-05-9P, Bis(tetrabutylammonium) dimolybdate 68109-03-5P,
Tetrakis(tetrabutylammonium) decatungstate 119720-71-7P 126213-84-1P
196392-01-5P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(oxidation catalyst; isopoly acid catalysts for oxidizing olefins)

IT 12329-09-8P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(oxidation catalyst; isopoly acid catalysts for oxidizing olefins)

RN 12329-09-8 HCAPLUS

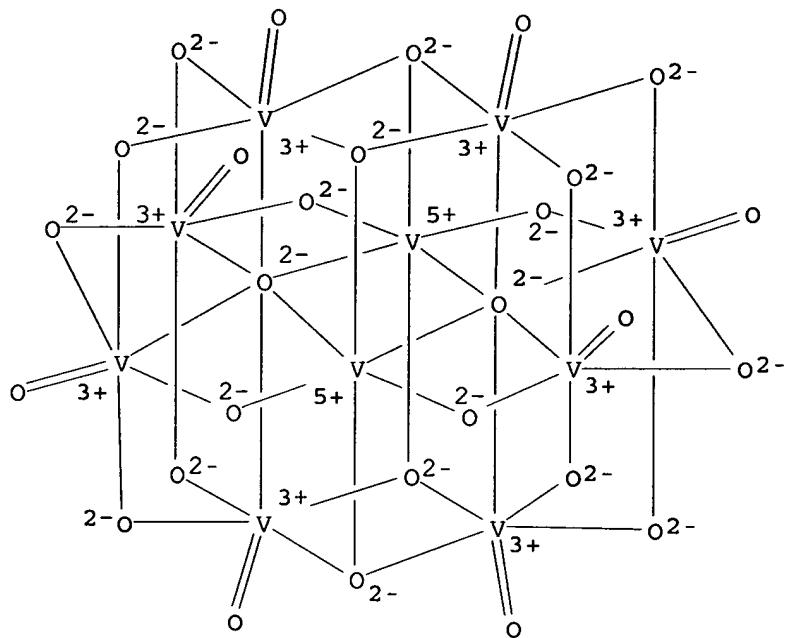
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

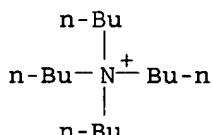
CRN 12397-12-5

CMF O28 V10

CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N

L65 ANSWER 4 OF 24 HCPLUS COPYRIGHT 2006 ACS on STN
 AN 2003:715242 HCPLUS
 DN 140:183533
 TI Oxidation of cyclohexene and α -pinene with O₂-H₂ mixture in the presence of supported platinum or palladium **catalysts**
 AU Kuznetsova, N. I.; Kuznetsova, L. I.; Kirillova, N. V.; Pokrovskii, L. M.; Detusheva, L. G.; Ancel, J.-E.; Likhobobov, V. A.
 CS G. K. Boreskov Institute of Catalysis, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 630090, Russia
 SO Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2003), 52(7), 1544-1551
 CODEN: RCBUEY; ISSN: 1066-5285
 PB Kluwer Academic/Consultants Bureau
 DT Journal
 LA English
 OS CASREACT 140:183533
 AB Oxidation of cyclohexene and α -pinene with an O₂-H₂ mixture in the catalytic systems containing Pt or Pd and heteropoly compds. (HPC) was studied. The main oxidation products are epoxides, allyl alcs., and ketones.

The highest yield of the oxidation products was obtained in the presence of the platinum **catalyst** in combination with HPC PW11 or PW11Fe.

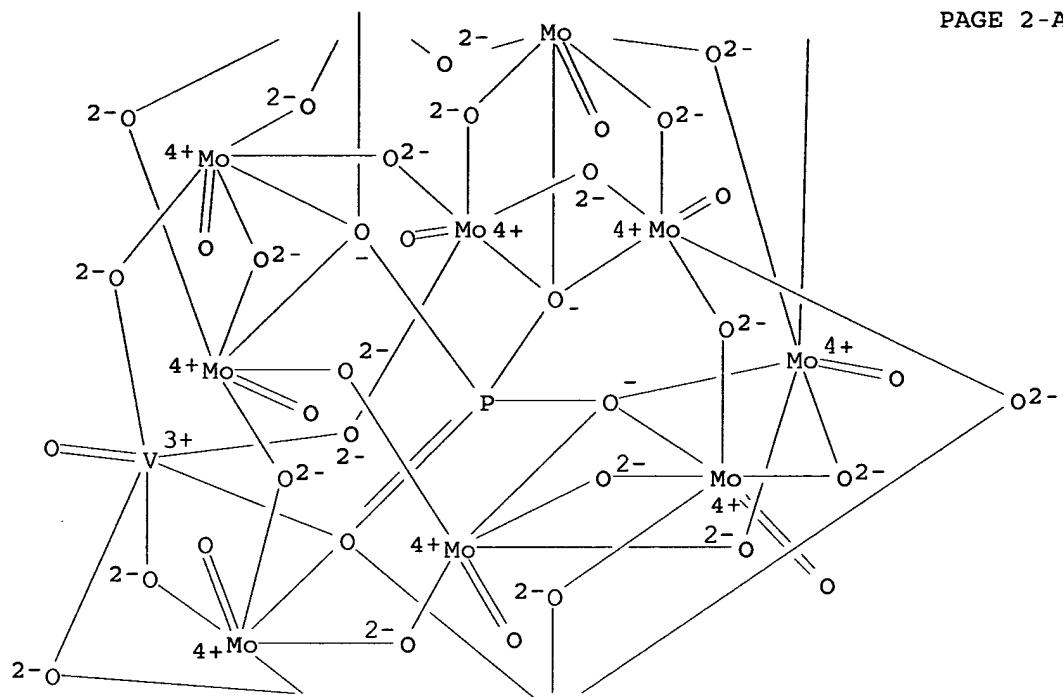
The reaction mechanism was proposed. A relationship between the HPC composition and the nature of intermediates involved in oxidation was examined

CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 ST cyclohexene pinene oxidn platinum palladium **catalyst**
 IT Oxidation **catalysts**
 (oxidation of cyclohexene and pinene with O₂-H₂ mixture in the presence of supported platinum or palladium **catalysts**)
 IT 1112-67-0, Tetrabutylammonium chloride 7440-05-3, Palladium, uses
 7440-06-4, Platinum, uses 12026-57-2, H3PMo12O40 12293-15-1
 12293-21-9 12293-24-2 53749-36-3 53749-37-4 104484-97-1
 134360-58-0 135480-92-1 144740-01-2 144740-04-5
 144839-08-7 145238-80-8 146066-47-9 200558-44-7
 RL: CAT (Catalyst use); USES (Uses)
 (oxidation of cyclohexene and pinene with O₂-H₂ mixture in the presence of supported platinum or palladium **catalysts**)
 IT 79-92-5P 80-57-9P 108-93-0P, Cyclohexanol, preparation 108-94-1P,
 Cyclohexanone, preparation 127-91-3P 138-86-3P 471-84-1P 473-54-1P
 473-55-2P 473-67-6P 498-71-5P 533-60-8P 564-94-3P 586-62-9P
 822-67-3P, 2-Cyclohexen-1-ol 930-68-7P, 2-Cyclohexen-1-one 931-17-9P,
 1,2-Cyclohexanediol 1686-14-2P 4080-46-0P 5502-88-5P 5947-36-4P
 30460-92-5P 53404-49-2P 91819-58-8P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (oxidation of cyclohexene and pinene with O₂-H₂ mixture in the presence of supported platinum or palladium **catalysts**)
 IT 80-56-8, α -Pinene 110-83-8, Cyclohexene, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidation of cyclohexene and pinene with O₂-H₂ mixture in the presence of supported platinum or palladium **catalysts**)
 IT 99-87-6P 286-20-4P, 7-Oxabicyclo[4.1.0]heptane
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (oxidation of cyclohexene and pinene with O₂-H₂ mixture in the presence of supported platinum or palladium **catalysts**)
 IT 134360-58-0
 RL: CAT (Catalyst use); USES (Uses)
 (oxidation of cyclohexene and pinene with O₂-H₂ mixture in the presence of supported platinum or palladium **catalysts**)
 RN 134360-58-0 HCAPLUS
 CN 1-Butanaminium, N,N,N-tributyl-, (heptadeca- μ -oxodecaoxodecamolybdate)hepta- μ -oxodioxo[μ 12-[phosphato(3-)- κ O: κ O: κ O': κ O': κ O': κ O'': κ O'':.kappa .O'': κ O'': κ O'': κ O'': κ O'':]divanadate(5-) (5:1)
 (9CI) (CA INDEX NAME)

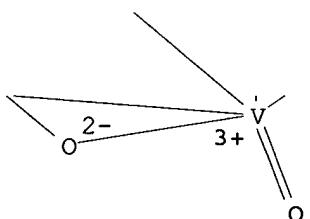
CM 1

CRN 58071-93-5
 CMF Mo10 O40 P V2
 CCI CCS

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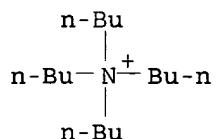


PAGE 2-A



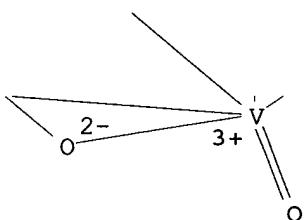
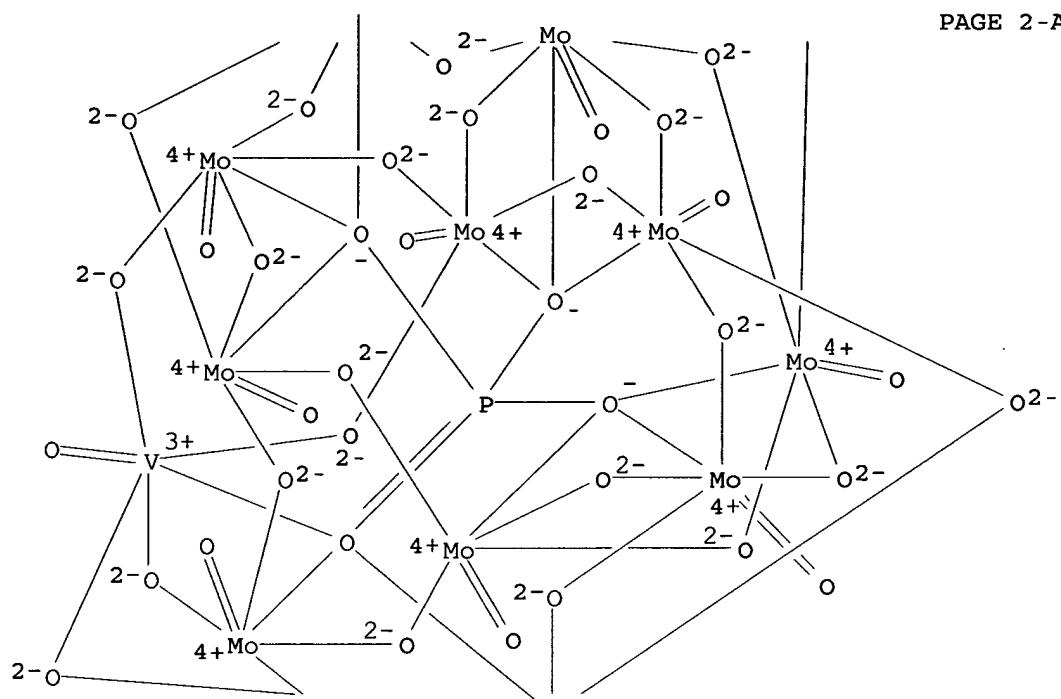
PAGE 3-A

CM 2

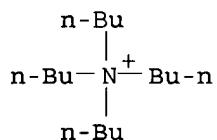
CRN 10549-76-5
CMF C16 H36 NRE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMATL65 ANSWER 5 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:698033 HCAPLUS

DN 140:217302
 TI Oxidation of hydrocarbons by dioxygen reductively activated on platinum and heteropoly compounds
 AU Kuznetsova, N. I.; Kirillova, N. V.; Kuznetsova, L. I.; Likholobov, V. A.
 CS Boreskov Institute of Catalysis, Novosibirsk, 630090, Russia
 SO Journal of Molecular Catalysis A: Chemical (2003), 204-205, 591-597
 CODEN: JMCCF2; ISSN: 1381-1169
 PB Elsevier Science B.V.
 DT Journal
 LA English
 OS CASREACT 140:217302
 AB Based on Pt and heteropoly compds. (HPC), **catalysts** are applied to liquid-phase oxidation of cyclohexane and cyclohexene with a mixture of O₂ and H₂ gases. Platinum **catalyst** in the presence of PW11 and PW11Fe HPC represent the most active catalytic systems for alkene oxidation, whereas highest reactivity of cyclohexane was exhibited in the presence of PMo12 HPC. Activity of the catalytic systems and **composition** of the oxygenated products are controlled by the nature of active intermediates generated under the action of the different HPC.
 CC 24-5 (Alicyclic Compounds)
 ST oxidn cyclohexane cyclohexene platinum heteropoly acid **catalyst**
 IT Oxidation
 Oxidation **catalysts**
 (oxidation of cyclohexane and cyclohexene by dioxygen reductively activated on platinum and heteropoly compds.)
 IT Heteropoly acids
 RL: **CAT (Catalyst use)**; USES (Uses)
 (oxidation of cyclohexane and cyclohexene by dioxygen reductively activated on platinum and heteropoly compds.)
 IT 7440-06-4, Platinum, uses 12026-57-2 12293-15-1 12293-21-9
 12293-24-2 12398-73-1 12786-62-8 53749-36-3 53749-37-4
 104484-97-1 134360-58-0 135480-92-1 144740-01-2
 144740-03-4 144740-04-5 144839-08-7 145238-80-8 146066-47-9
 200558-44-7
 RL: **CAT (Catalyst use)**; USES (Uses)
 (oxidation of cyclohexane and cyclohexene by dioxygen reductively activated on platinum and heteropoly compds.)
 IT 12411-60-8P
 RL: **CAT (Catalyst use)**; SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (oxidation of cyclohexane and cyclohexene by dioxygen reductively activated on platinum and heteropoly compds.)
 IT 134360-58-0
 RL: **CAT (Catalyst use)**; USES (Uses)
 (oxidation of cyclohexane and cyclohexene by dioxygen reductively activated on platinum and heteropoly compds.)
 RN 134360-58-0 HCAPLUS
 CN 1-Butanaminium, N,N,N-tributyl-, (heptadeca- μ -oxodecaoxodecamolybdate)hepta- μ -oxodioxo[μ 12-[phosphato(3-) - κ O: κ O: κ O': κ O': κ O': κ O'': κ O'':.kappa O'': κ O'': κ O'': κ O'':.kappa O'':] μ 12-]divanadate(5-) (5:1)
 (9CI) (CA INDEX NAME)
 CM 1
 CRN 58071-93-5
 CMF Mo10 O40 P V2
 CCI CCS

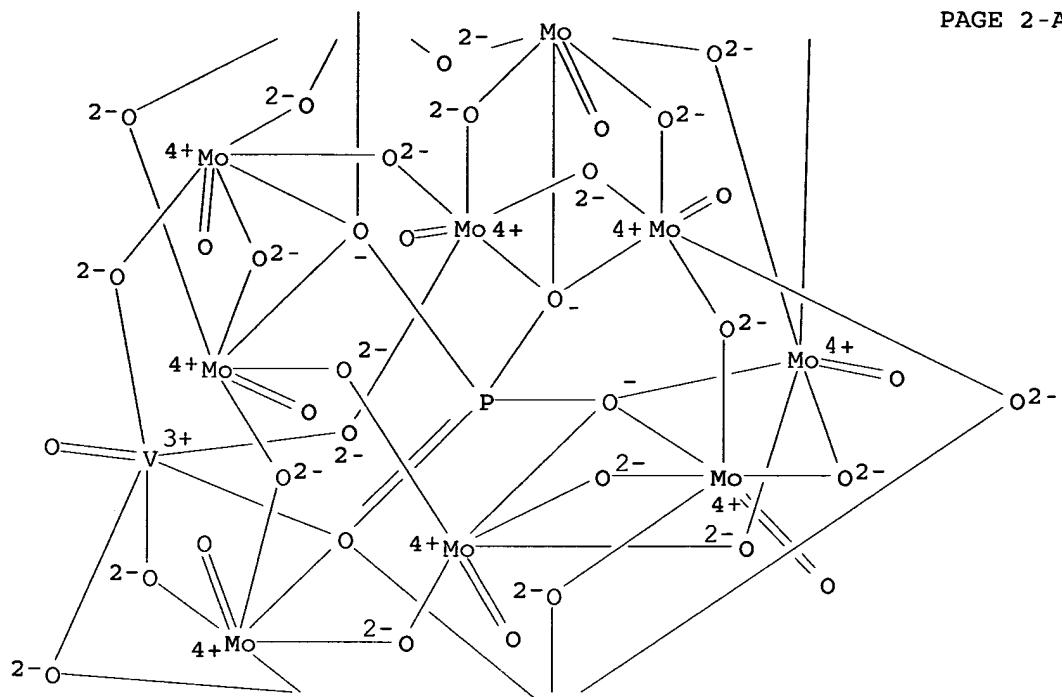
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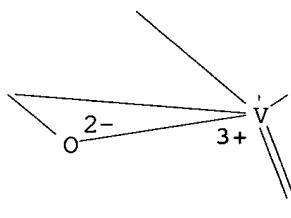
CM 2

CRN 10549-76-5
CMF C16 H36 NRE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 ANSWER 6 OF 24 HCPLUS COPYRIGHT 2006 ACS on STN
AN 2003:69806 HCPLUS
DN 138:368313
TI Activation of nitrous oxide and selective oxidation of alcohols and alkylarenes catalyzed by the [PV2Mo10O40]5- polyoxometalate ion
AU Ben-Daniel, Revital; Neumann, Ronny
CS Department of Organic Chemistry, Weizmann Institute of Science, Rehovot, 76100, Israel
SO Angewandte Chemie, International Edition (2003), 42(1), 92-95
CODEN: ACIEF5; ISSN: 1433-7851
PB Wiley-VCH Verlag GmbH & Co. KGaA
DT Journal
LA English
OS CASREACT 138:368313
AB A different set of N2O-activation reactions involving the vanadium-containing Keggin-type polyoxomolybdate, (nBu4N)5(PV2Mo10O40) was investigated. In this case, selective oxidation by C-H bond activation was possible leading to the oxidation of (a) primary and secondary alcs. to aldehydes and ketones and (b) alkyl aroms. to ketones on, or alternatively leading to their oxydehydrogenation.
CC 21-2 (General Organic Chemistry)
Section cross-reference(s): 67
ST nitrous oxide activation selective oxidn alc alkylarene polyoxometalate catalyst; molybdoavanadophosphate polyoxometalate catalyst
oxidn alc alkylarene nitrous oxide activation
IT Aromatic hydrocarbons, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(alkyl; nitrous oxide-activated selective oxidation of alcs. and alkylarenes in presence of molybdoavanadophosphate polyoxometalate ion catalyst)
IT Heteropoly acids
RL: CAT (Catalyst use); USES (Uses)
(nitrous oxide-activated selective oxidation of alcs. and alkylarenes in presence of molybdoavanadophosphate polyoxometalate ion catalyst)
IT Aldehydes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(nitrous oxide-activated selective oxidation of alcs. and alkylarenes in presence of molybdoavanadophosphate polyoxometalate ion catalyst)
IT Ketones, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(nitrous oxide-activated selective oxidation of alcs. and alkylarenes in presence of molybdoavanadophosphate polyoxometalate ion catalyst)
IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(primary; nitrous oxide-activated selective oxidation of alcs. and alkylarenes in presence of molybdoavanadophosphate polyoxometalate ion catalyst)
IT Alcohols, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(secondary; nitrous oxide-activated selective oxidation of alcs. and alkylarenes in presence of molybdoavanadophosphate polyoxometalate ion catalyst)
IT Oxidation
Oxidation catalysts
(selective; nitrous oxide-activated selective oxidation of alcs. and alkylarenes in presence of molybdoavanadophosphate polyoxometalate ion

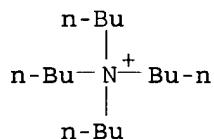


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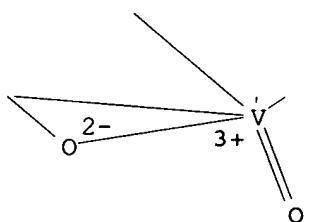
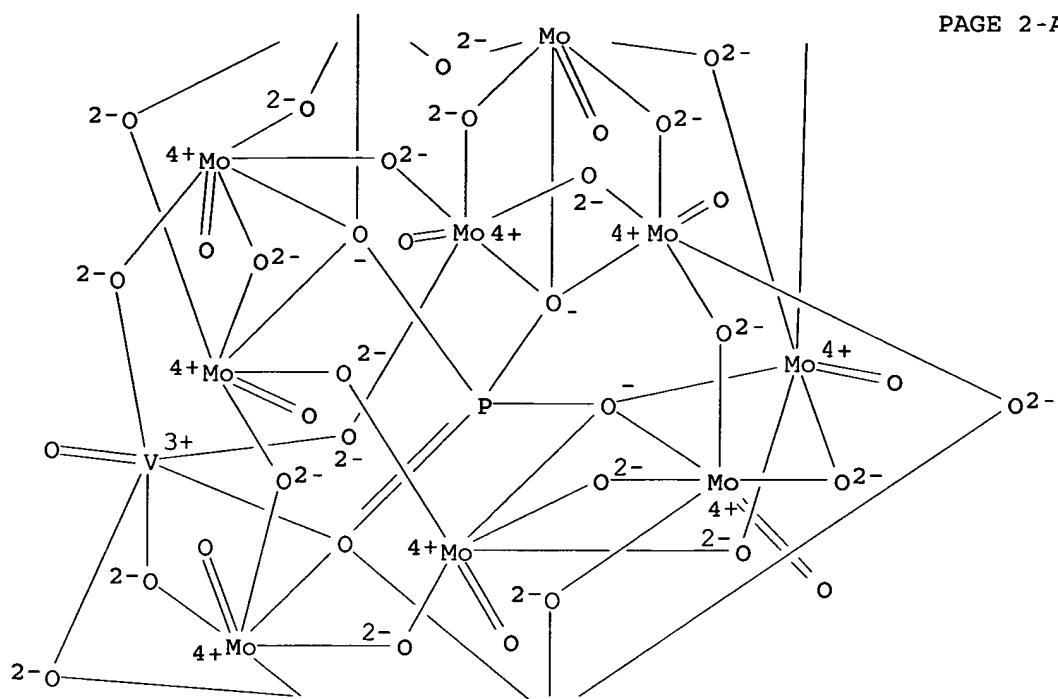


PAGE 3-A

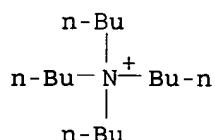
CM 2

CRN 10549-76-5
CMF C16 H36 NRE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMATL65 ANSWER 7 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:667570 HCAPLUS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



CM 2

CRN 10549-76-5
CMF C16 H36 NRE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 ANSWER 8 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:243085 HCAPLUS
DN 137:14814
TI Reactions of trivacant Wells-Dawson heteropolytungstates. Ionic strength and Jahn-Teller effects on formation in multi-iron complexes
AU Anderson, Travis M.; Zhang, Xuan; Hardcastle, Kenneth I.; Hill, Craig L.
CS Department of Chemistry, Emory University, Atlanta, GA, 30322, USA
SO Inorganic Chemistry (2002), 41(9), 2477-2488
CODEN: INOCAJ; ISSN: 0020-1669
PB American Chemical Society
DT Journal
LA English
OS CASREACT 137:14814
AB Reaction of α -P2W15O5612- and Fe(III) in a saturated NaCl solution produces a trisubstituted Wells-Dawson structure with three low-valent metals, α -(FeIIIICl)₂(FeIIIOH₂)P2W15O5911- (1). Dissoln. of this species into 1 M NaBr (Br- is noncoordinating) gives the triaquated species α -(FeIIIOH₂)₃P2W15O599- (2). Ionic strength values of 1 M or greater are necessary to avoid decomposition of 1 or 2 to the conventional sandwich-type complex, $\alpha\beta\beta\alpha$ -(FeIIIOH₂)₂FeIII₂(P2W15O56)₂12- (3). If the pH is >5, a new triferric sandwich, $\alpha\alpha\beta\alpha$ -(NaOH₂)(FeIIIOH₂)FeIII₂(P2W15O56)₂14- (4), forms rather than 3. Like the previously reported Wells-Dawson-derived sandwich-type structures with three metals in the central unit ([TMIIFeIII₂(P2W15O56)(P2TMII₂W13O52)]₁₆₋ TM = Cu, Co), this complex has a central α -junction and a central β -junction. Thermal studies suggest that 4 is more stable than 3 over a wide range of temps. and pH values. The intrinsic Jahn-Teller distortion of d-electron-containing metal ions incorporated into the external sites of the central multimetal unit impacts the stoichiometry of their incorporation (with a consequent change in the inter-POM-unit connectivity, where POM = polyoxometalate). Reaction of nondistorting Ni(II) with the diferric lacunary sandwich-type POM $\alpha\alpha\alpha\alpha$ -(NaOH₂)₂FeIII₂(P2W15O56)₂16- (5) produces $\alpha\beta\beta\alpha$ -(NiIIIOH₂)₂FeIII₂(P2W15O56)₂14- (6), a Wells-Dawson sandwich-type structure with two Ni(II) and two Fe(III) in the central unit. All structures were characterized by ³¹P NMR, IR, UV-visible, magnetic susceptibility, and x-ray crystallog. Complexes 4 and 6 are highly selective and effective catalysts for the H₂O₂-based epoxidn. of alkenes.
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT Epoxidation catalysts
(iron and nickel substituted tungstophosphate complexes for alkenes)
IT Heteropoly acids
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation, crystal structure, thermal stability and catalyst for hydrogen peroxide-based epoxidn. of alkenes)
IT 433227-61-3P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and catalyst for hydrogen peroxide-based epoxidn. of alkenes)
IT 433227-67-9P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation and catalyst for hydrogen peroxide-based epoxidn. of alkenes)
IT 433227-61-3P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation and **catalyst** for hydrogen peroxide-based epoxidn. of alkenes)

RN 433227-61-3 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, (aquatriferrate)dohexaonta- μ -oxodi- μ 3-oxodotriacontaoxo[μ 8-[phosphato(3-)- κ O: κ O: κ O': κ O'': κ O'''': κ O''']]tris[μ 9-[phosphato(3-)- κ O: κ O: κ O: κ O': κ O': κ O''': κ O''']]triacontatungstate(15-)(15:1)(9CI)
(CA INDEX NAME)

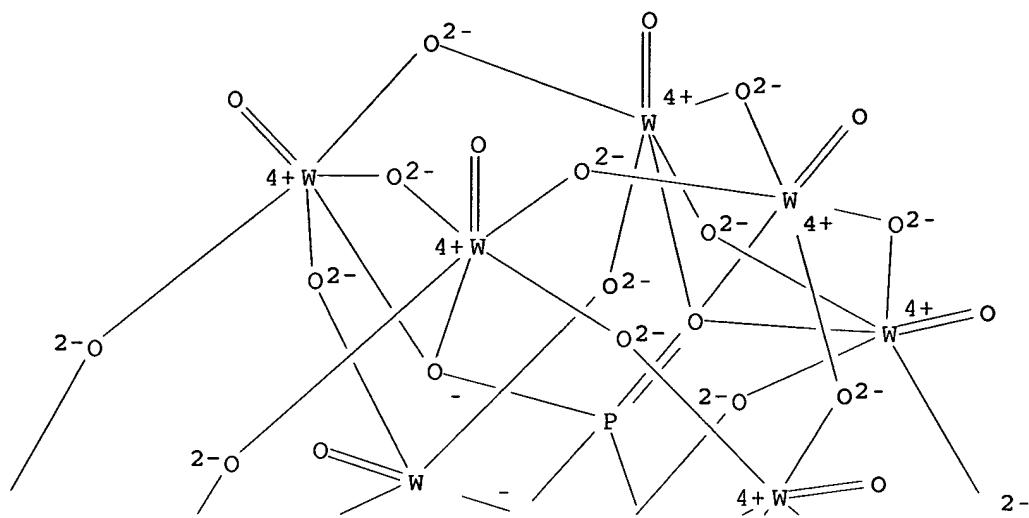
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CRN 433227-60-2
CMF Fe3 H2 O113 P4 W30
CCI CCS

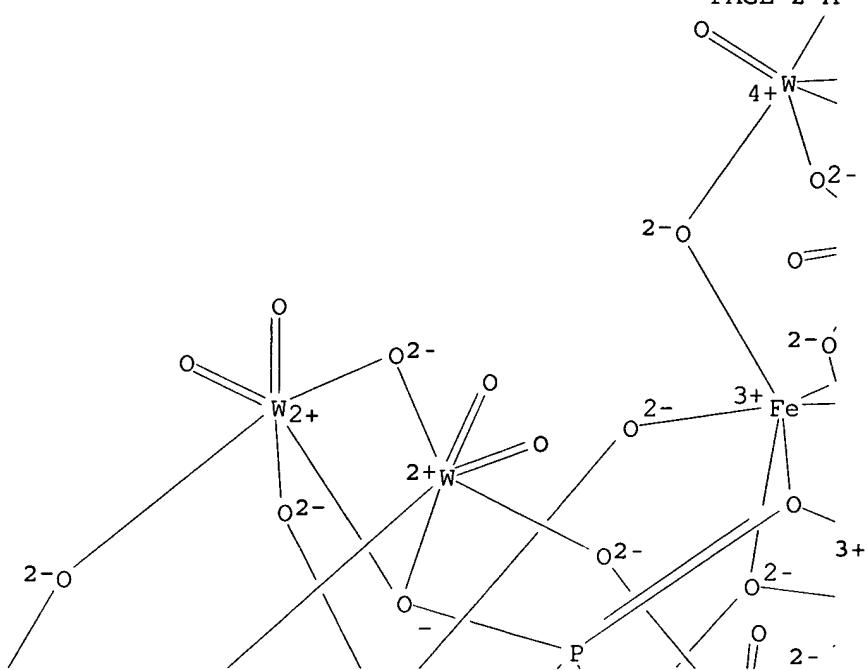
PAGE 1-A

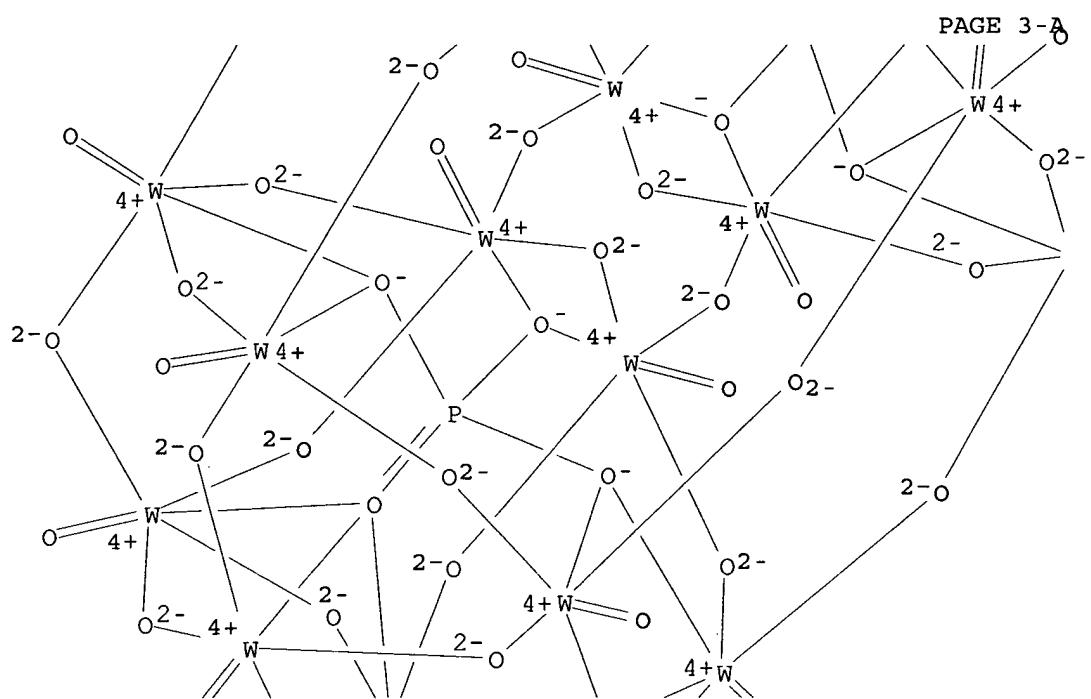
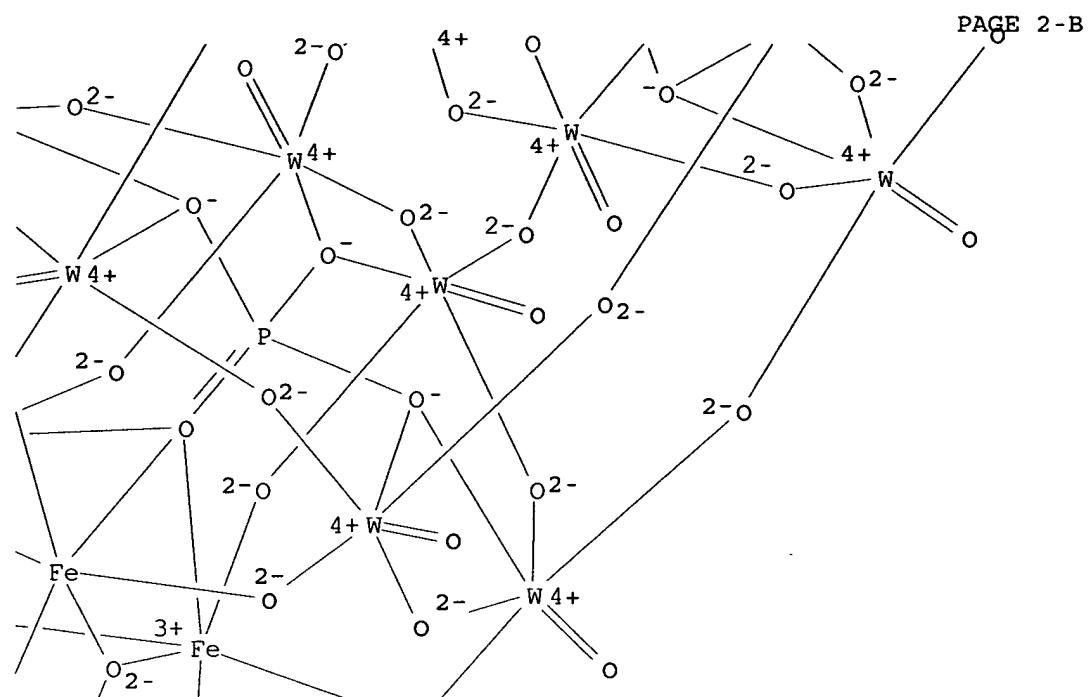
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PAGE 1-B

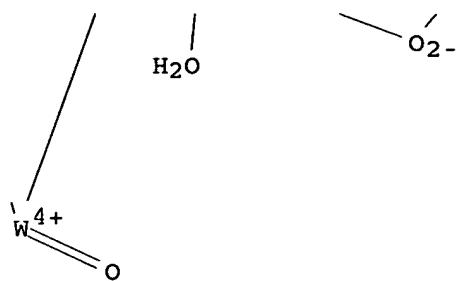


PAGE 2-A

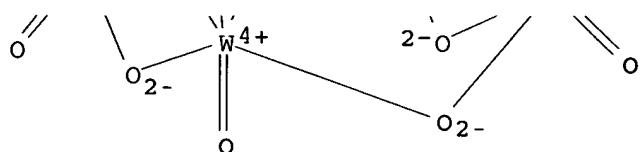




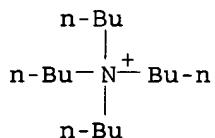
PAGE 3-B



PAGE 4-A



CM 2

CRN 10549-76-5
CMF C16 H36 NRE.CNT 91 THERE ARE 91 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 ANSWER 9 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 2000:488611 HCAPLUS
 DN 133:216848
 TI Synthesis and structure of a new reduced isopolyvanadate, [V17O42]⁴⁻
 AU Hayashi, Yoshihito; Fukuyama, Kumiko; Takatera, Tamaki; Uehara, Akira
 CS Department of Chemistry, Faculty of Science, Kanazawa University,
 Kanazawa, 920-1192, Japan
 SO Chemistry Letters (2000), (7), 770-771
 CODEN: CMLTAG; ISSN: 0366-7022
 PB Chemical Society of Japan
 DT Journal
 LA English
 AB Reduced heptadecavanadate [V17O42]⁴⁻ was synthesized from [H3V10O28]³⁻ by
 the reaction using Pd 1,5-COD complex, and characterized by a single
 crystal x-ray structure anal. The structure can be regarded as a fused
 decavanadate and consists of an arrangement of thirteen edge shared VO₆
 octahedra and four VO₅ square pyramids.
 CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 75

IT 12080-32-9

RL: CAT (Catalyst use); USES (Uses)
 (catalyst for preparation of reduced heptadecanuclear
 isopolyvanadate complex)

IT 12329-09-8

RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of reduced heptadecanuclear isopolyvanadate complex)

IT 12329-09-8

RL: RCT (Reactant); RACT (Reactant or reagent)
 (for preparation of reduced heptadecanuclear isopolyvanadate complex)

RN 12329-09-8 HCPLUS

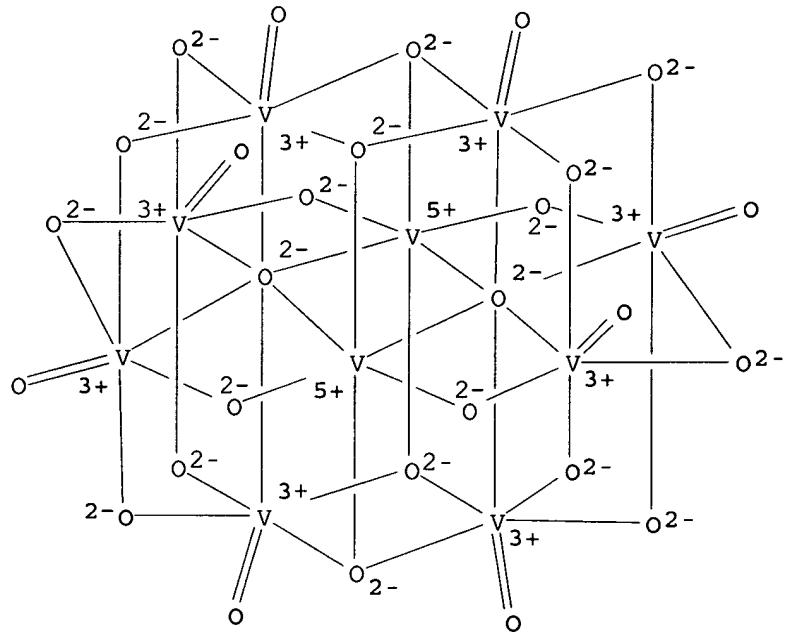
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

CMF O28 V10

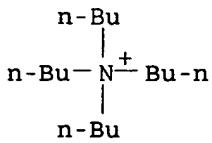
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 ANSWER 10 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1998:684433 HCAPLUS
 DN 129:339856
 TI Method, compositions, and aerosol spray containing a polyoxometalate for treating and preventing respiratory viral infections
 IN Schinazi, Raymond F.; Hill, Craig L.
 PA USA
 SO U.S., 18 pp., Cont.-in-part of U.S. Ser. No. 312,561, abandoned.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5824706	A	19981020	US 1995-399700	19950303
WO 9609764	A1	19960404	WO 1995-US11961	19950926
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM				
RW: KE, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9536366	A1	19960419	AU 1995-36366	19950926
US 6020369	A	20000201	US 1998-111275	19980707
PRAI US 1994-312561	B2	19940926		
US 1995-399700	A	19950303		
WO 1995-US11961	W	19950926		
AB Respiratory viral infections may be effectively prevented or treated by administering an aerosol spray comprising a polyoxometalate to the lungs. (Me3NH)5TaSiW11O40 had a selectivity index greater than 300 when evaluated in HIV-1 acutely infected primary human PBM cells and had no cytotoxicity to uninfected human PBM cells when evaluated up to 100 μ M.				
IC ICM A01N055-02				
ICS A01N059-14; A01N059-16; A01N059-20				
INCL 514492000				
CC 1-5 (Pharmacology)				
Section cross-reference(s): 29, 63, 78				
IT 11078-54-9 12027-38-2D, solid solution with ammonium analog 12045-18-0				
12059-48-2 12141-67-2 12142-54-0 12200-88-3 12297-12-0				
12297-12-0D, solid solns. with ammonium analog and protonated amino acid analog 12329-09-8 12329-10-1 12390-22-6 12411-74-4				
12436-83-8 37300-95-1 39282-41-2 59054-50-1 59111-46-5				
63950-53-8 63995-70-0 64684-58-8 70316-17-5 75656-59-6				
77981-80-7D, solid solution with tetrahydrogen analog 79104-95-3				
81552-97-8 82679-05-8 83721-03-3 83721-04-4 84303-03-7				
84303-05-9 84750-84-5 87261-30-1 89899-81-0, Ammonium antimony sodium tungsten oxide ((NH ₄) ₁₇ Sb ₉ Na ₂ W ₂₁ O ₈₆) 92762-45-3 92767-45-8				
93425-27-5 100513-52-8 101144-77-8 101346-99-0 101347-00-6				

101347-04-0 101347-05-1 101347-09-5 101347-11-9 101347-12-0
 101347-13-1 102073-48-3 108834-36-2 108987-13-9 110294-54-7
 110313-16-1 110717-64-1 110717-65-2 110717-67-4 110717-70-9
 111933-31-4 112763-08-3 112763-08-3D, solid solution with tetrahydrogen
 analog 116434-67-4 119390-04-4 119720-71-7 119923-89-6
 123639-37-2 129238-68-2 129238-69-3D, solid solns. with sodium and
 tetramethylammonium analogs 129238-70-6D, solid solns. with sodium and
 tetramethylammonium analogs 129572-46-9 129572-47-0 129592-85-4
 131359-48-3 131541-68-9 131541-69-0 131541-70-3 132460-56-1
 132460-57-2 132460-58-3 134107-05-4 138026-47-8 139631-90-6
 139631-92-8 139631-93-9 139631-95-1 139631-96-2 139631-98-4
 139632-00-1 141483-63-8 141532-40-3 141532-61-8 143823-91-0
 143823-92-1 144547-23-9 146026-67-7 148362-93-0 149275-00-3
 152444-38-7 152444-39-8 152444-40-1 152514-03-9 153481-12-0
 153481-15-3 153541-07-2 158702-61-5 160097-69-8D, solid solns. with
 sodium and potassium analogs 160097-70-1D, solid solns. with potassium
 and sodium analogs 160220-13-3 160241-96-3 162958-07-8D, solid solns.
 with potassium and tetramethylammonium analogs 162958-09-0 162958-11-4
 162958-12-5 162958-14-7 162958-16-9 162958-18-1 162958-20-5
 162958-21-6 162958-22-7 162958-22-7D, solid solns. with potassium and
 tetramethylammonium analogs 163128-97-0 163128-98-1 163151-26-6
 163151-27-7 167397-05-9 170126-82-6 187086-33-5 189277-29-0
 189277-31-4 189823-27-6 189823-28-7 189823-30-1 189823-33-4
 189823-37-8 189823-38-9 194150-76-0 215545-74-7 215545-75-8,
 Potassium titanium tungsten oxide (K7Ti2W10040) 215545-77-0
 215545-78-1 215545-79-2 215545-80-5 215545-81-6 215545-82-7
 215545-83-8 215545-84-9 215545-85-0 215545-86-1 215591-58-5
 215594-35-7 215594-50-6 215594-63-1 215594-64-2 215594-65-3D,
 solid solution with histidine or lysine analog 215594-66-4D, solid solution
 with sodium analog 215594-68-6 215594-70-0 215594-72-2 215594-74-4
 215594-76-6 215594-77-7 215594-78-8 215594-79-9 215594-80-2
 215594-81-3 215594-82-4 215594-83-5 215594-86-8 215594-87-9
 215594-88-0 215594-89-1 215594-90-4 215594-91-5 215594-93-7
 215594-95-9 215594-98-2 215595-00-9 215595-02-1 215595-04-3
 215595-06-5 215595-07-6 215595-09-8 215595-11-2 215595-12-3
 215595-13-4 215595-14-5 215595-15-6 215595-16-7 215595-17-8D,
 Niobium sodium tungsten oxide (Nb4Na6W2019), solid solution with potassium
 analog 215595-18-9 215595-19-0 215595-21-4 215595-22-5D, solid
 solution with sodium analog 215595-23-6D, Niobium potassium tungsten oxide
 (Nb4K6W2019), solid solution with sodium analog 215595-24-7 215601-32-4
 215601-56-2 215601-59-5

RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
 (Uses)

(method and aerosol spray containing a polyoxometalate for treating and
 preventing respiratory viral infections)

IT 12329-09-8

RL: BAC (Biological activity or effector, except adverse); BSU (Biological
 study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
 (Uses)

(method and aerosol spray containing a polyoxometalate for treating and
 preventing respiratory viral infections)

RN 12329-09-8 HCAPLUS

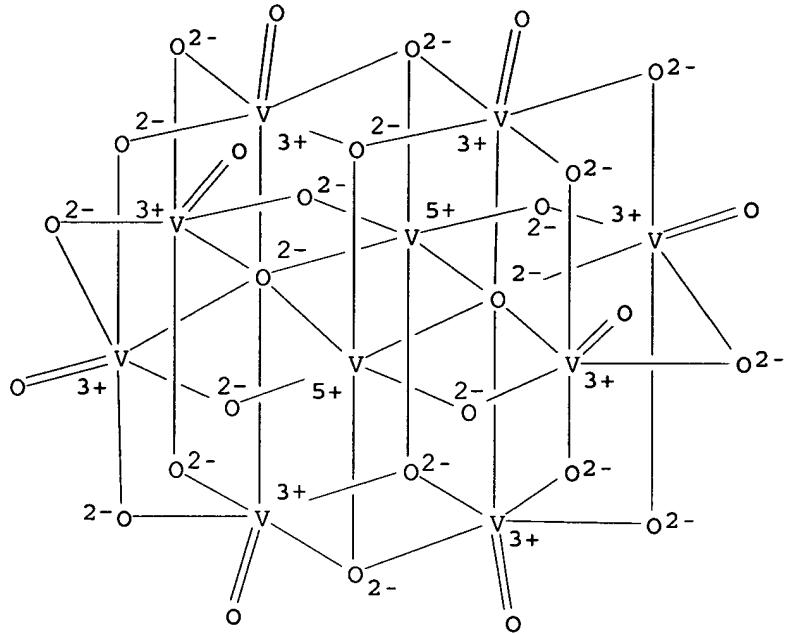
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-
 oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

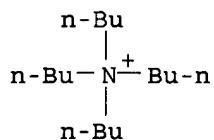
CRN 12397-12-5

CMF O28 V10

CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 NRE.CNT 100 THERE ARE 100 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 ANSWER 11 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1997:753705 HCAPLUS
 DN 128:80374
 TI Functional action of Keggin-type mono-vanadium(V)-substituted heteropolyoxomolybdate as a single species on catalytic hydroxylation of benzene in the presence of hydrogen peroxide
 AU Nomiya, Kenji; Yagishita, Kazunori; Nemoto, Yukihiro; Kamataki, Tada-aki
 CS Hiratsuka, Department of Materials Science, Kanagawa University, Kanagawa 259-12, Japan
 SO Journal of Molecular Catalysis A: Chemical (1997), 126(1), 43-53
 CODEN: JMCCF2; ISSN: 1381-1169
 PB Elsevier Science B.V.
 DT Journal

LA English

AB Benzene hydroxylation in the presence of hydrogen peroxide was studied using tetrabutylammonium salts of three types of mono-vanadium-substituted heteropolyanions (HPA) as catalyst precursors. $[\text{PMo11VO40}]^{4-}$ (PMo11V , 1), which was first prepared herein and identified as a single species. $[\text{PMo11VO40}]^{4-}$ ($\text{PMo11V}'$, 4), which was obtained traditionally by the so-called ether-extraction method and known as a mixed species only with an averaged composition $\text{P:Mo:V} = 1:11:1$. $[\text{PW11VO40}]^{4-}$ (PW11V , 2), which has been prepared as a single species. 1 Catalytically oxidized benzene to phenol under the conditions: 0.1 mmol catalyst, 10 mL (113 mmol) benzene, 5 or 10 mL of CH_3CN and 2 mL of 30 aqueous H_2O_2 . The catalytic turnover by 1 for phenol production was dependent on the amount of CH_3CN : it was 1.3 after 120 h reaction with 10 mL CH_3CN and 1.7 after 192 h reaction with 5 mL CH_3CN . On the other hand, 2 did not show catalytic activity even after 240 h reaction under the same conditions. In comparison, it was also confirmed there was no catalytic effect by $[\text{PMo12O40}]^{3-}$ (PMo12) without a vanadium(V) center. 4 Has apparently shown a more enhanced effect, e.g. with catalytic turnover of 7.5 after 144 h reaction with 10 mL CH_3CN . These observations significantly suggest that the catalysis by PMo11V for benzene hydroxylation is due to cooperative action of the molybdenum framework with one vanadium(V) center. Such action of the polyoxoanion framework has not been observed in the selectively site-substituted vanadium(V) heteropolytungstates such as $[\alpha-1,2-\text{PW10V2O40}]^{5-}$ and $[\alpha-1,2,3-\text{PW9V3O40}]^{6-}$, the catalyzes by which were due to the dinuclear vanadium centers with corner-shared octahedra. Furthermore, the marked stability of the mono-vanadium(V)-substituted species 1 of several vanadium(V)-substituted heteropolymolybdates as catalyst precursors was clarified in the benzene hydroxylation.

CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 25, 45, 78

ST molybdoavanadophosphate hydroxylation catalyst peroxide benzene;
vanadophosphate molybdo hydroxylation catalyst peroxide benzene

IT Hydroxylation
Hydroxylation catalysts
(Keggin-type molybdoavanadophosphates as hydroxylation catalyst for benzene)

IT Heteropoly acids
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(molybdoavanadophosphates; preparation of Keggin-type molybdoavanadophosphates as hydroxylation catalyst for benzene)

IT 71-43-2, Benzene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(Keggin-type molybdoavanadophosphates as hydroxylation catalyst for benzene)

IT 12026-57-2P 59519-72-1P
RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(for preparation of Keggin-type molybdoavanadophosphates as hydroxylation catalyst for benzene)

IT 7631-95-0, Disodium molybdate 7727-18-6, Vanadium oxychloride
12293-21-9 12293-24-2 13472-45-2, Disodium tungstate 13718-26-8,
Vanadate (VO_3^{3-}) sodium
RL: RCT (Reactant); RACT (Reactant or reagent)
(for preparation of Keggin-type molybdoavanadophosphates as hydroxylation catalyst for benzene)

IT 108-95-2P, Phenol, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation by benzene hydroxylation in presence of Keggin-type molybdoavanadophosphates catalyst)

IT 12293-15-1P 53749-36-3P 62036-80-0P 152469-21-1P
 200558-44-7P 200558-46-9P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (preparation of Keggin-type molybdo vanadophosphates as hydroxylation
 catalyst for benzene)

IT 152469-21-1P
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (preparation of Keggin-type molybdo vanadophosphates as hydroxylation
 catalyst for benzene)

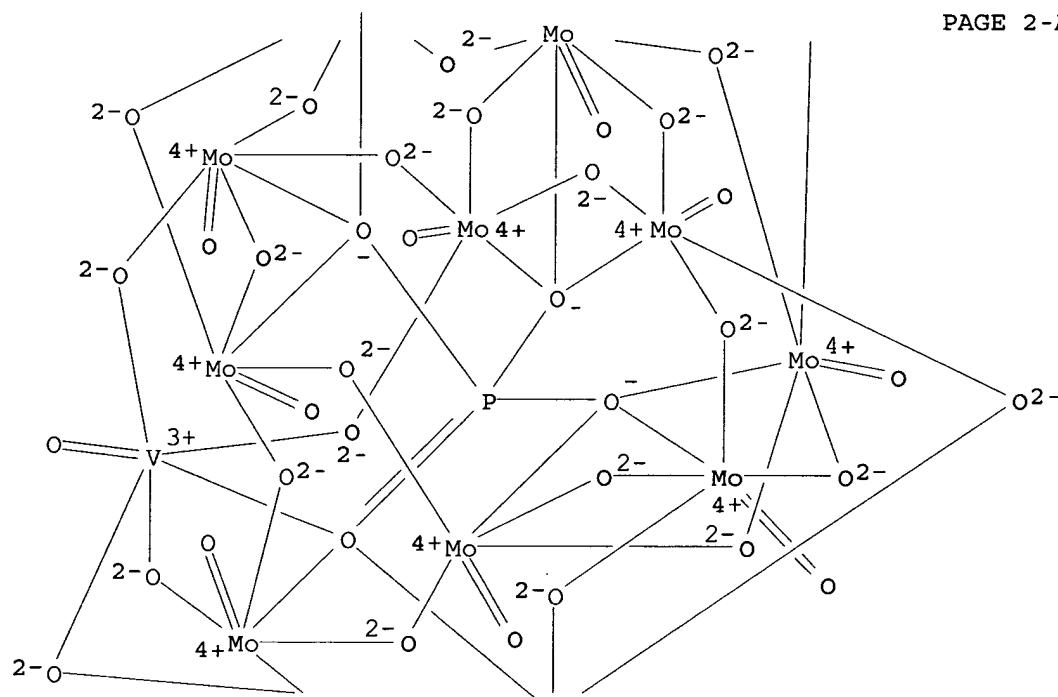
RN 152469-21-1 HCAPLUS
 CN 1-Butanaminium, N,N,N-tributyl-, hydrogen (heptadeca- μ -
 oxodecaoxodecamolybdate)hepta- μ -oxodioxo[μ 12-[phosphato(3-)-
 κ O: κ O: κ O': κ O': κ O': κ O'': κ O'': κ O'']]divanadate(5-)
 (4:1:1) (9CI) (CA INDEX NAME)

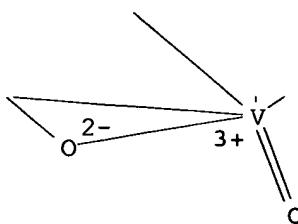
CM 1

CRN 58071-93-5
 CMF Mo10 O40 P V2
 CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

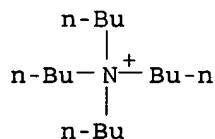
PAGE 2-A





PAGE 3-A

CM 2

CRN 10549-76-5
CMF C16 H36 NRE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L65 ANSWER 12 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1996:348187 HCAPLUS
 DN 125:167087
 TI Surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores; XAFS/FTIR/TPD characterization and catalytic behavior
 AU Ichikawa, Masaru; Pan, Wei; Imada, Yasunori; Yamaguchi, Masatugu; Isobe, Kiyoshi; Shido, Takafumi
 CS Catalysis Research Center, Hokkaido University, Sapporo, 060, Japan
 SO Journal of Molecular Catalysis A: Chemical (1996), 107(1-3), 23-38
 CODEN: JMCCF2; ISSN: 1381-1169
 PB Elsevier
 DT Journal
 LA English
 AB SiO₂-grafted $[(\mu_3\text{-C}_4\text{H}_7)_2\text{Rh}]_2\text{V}_2\text{O}_12$ and $[(\text{RhCp}^*)_4\text{V}_6\text{O}_19]$ as mol. models of supported Rh **catalysts** characterized by EXAFS, FTIR, and TPD exhibit high catalytic activities for selective oxidation of propene towards acetone. SiO₂-impregnated triple cubane-type complete $[(\text{RhCp}^*)_4\text{Mo}_4\text{O}_16]$ and incomplete $(\text{RhCp}^*)_2\text{Mo}_3\text{O}_9(\text{OMe})_4$ were reduced under photoillumination (>365 nm) in CO at 300 K, forming two sets of the intense carbonyl bands at (2061 and 2021 cm⁻¹) and (2092 and 2035 cm⁻¹). All the carbonyls attracted to Rh and Mo sites were eliminated by the thermal evacuation at 330-440 K, leaving oxygen-deficient sites of Mo in the cubane-oxide clusters, which exhibited high catalytic activities for propene metathesis at 300-343 K. We have conducted the low-temperature homologation of methane on a series of zeolite-entrapped Ru, Rh, Co and Pt **catalysts** which were prepared from $\text{Ru}_3(\text{CO})_{12}/\text{NaY}$, $\text{H}_4\text{Ru}_4(\text{CO})_{12}/\text{NaY}$, $[\text{HRu}_6(\text{CO})_{18}]^-/\text{NaY}$, $\text{Co}_4(\text{CO})_{12}/\text{NaY}$, $\text{Rh}_6(\text{CO})_{16}/\text{NaY}$, $[\text{Pt}_3(\text{CO})_3(\mu_2\text{-CO})_3]n_2^-$ ($n = 3, 4$)/NaY. The carbon species $[\text{CH}_x]$ ($x = 0-3$) are deposited on naked metal clusters in NaY by admission of methane at 423-623 K, which are stoichiometrically converted by hydrogen at 300-423 K towards C₁-C₅ hydrocarbons without any formation of graphic carbons. The yields of C₂₊ hydrocarbons in methane homologation were affected by the size of Ru clusters and carbon coverage

θc, as follows; Ru3/NaY < Ru4/NaY < Ru6/NaY < Ru (50 Å) on NaY; The reactivity of surface carbon bound to metal clusters in zeolites and mechanism for C-C bond formation are discussed in conjunction with Ru ensemble-size effects and intrazeolitic chemical circumstances.

CC 22-7 (Physical Organic Chemistry)
 Section cross-reference(s): 67

ST XAFS surface grafted metal oxide cluster; FTIR surface grafted metal oxide cluster; TPD surface grafted metal oxide cluster; metal carbonyl cluster zeolite micropore catalyst; catalytic activity grafted silica zeolite micropore

IT Clusters
 Desorption
 Double decomposition
 Double decomposition catalysts
 Infrared spectra
 Kinetics of oxidation
 Molecular modeling
 Oxidation
 Oxidation catalysts
 Reduction, photochemical
 (XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT Carbonyls
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT Zeolites, reactions
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
 (NaY, XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT Insertion reaction
 Insertion reaction catalysts
 (homologation, XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT 1314-62-1, Vanadia, uses
 RL: CAT (Catalyst use); USES (Uses)
 (XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-48-4, Cobalt, uses
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT 7631-86-9D, Silica, surface-grafted metal oxide clusters 119720-71-7D, silica grafted 126213-84-1D, silica grafted 135456-91-6D, silica grafted 169382-89-2D, silica grafted
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT 12308-00-8 12329-09-8 169382-90-5

RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

IT 12329-09-8

RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)

(XAFS/FTIR/TPD characterization and catalytic behavior of surface-grafted metal oxide clusters and metal carbonyl clusters in zeolite micropores)

RN 12329-09-8 HCAPLUS

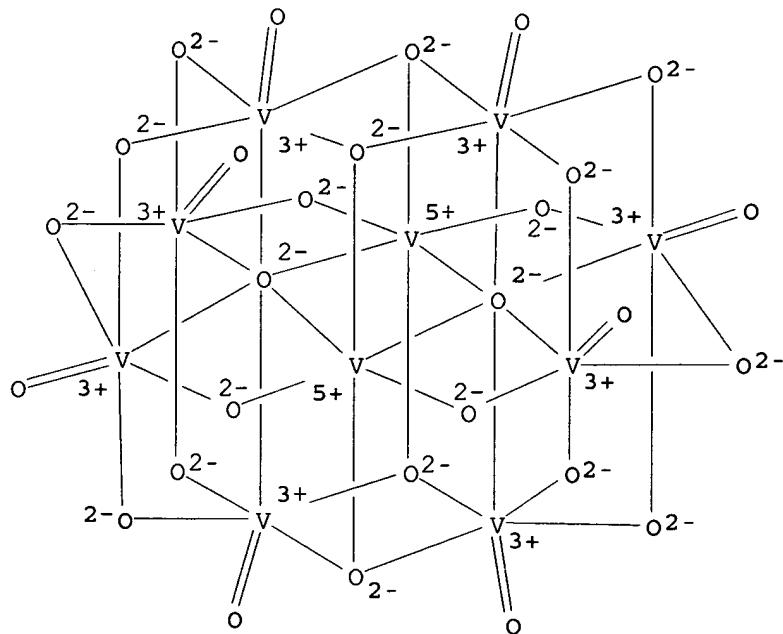
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

CMF O28 V10

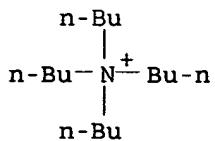
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N



L65 ANSWER 13 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1995:749836 HCAPLUS
 DN 123:338770
 TI EXAFS/FTIR characterization and selective hydration of acetonitrile on
 silica-supported [(RhCp*)4V6O19]
 AU Yamaguchi, Masatsugu; Shido, Takafumi; Ohtani, Hiroko; Isobe, Kiyoshi;
 Ichikawa, Masaru
 CS Catalysis Res. Cent., Hokkaido Univ., Sapporo, 060, Japan
 SO Chemistry Letters (1995), (8), 717-18
 CODEN: CMLTAG; ISSN: 0366-7022
 PB Nippon Kagakkai
 DT Journal
 LA English
 AB Silica-supported [(RhCp*)4V6O19] exhibited high catalytic activities in
 the gas-phase hydration of acetonitrile towards acetamide at 350-473 K
 with selectivity of over 97% and dehydrogenation of 2-propanol to acetone.
 EXAFS, XPS and FTIR studies suggested that thermal evacuation of
 silica-supported [(RhCp*)4V6O19] at 473 K led to the removal of the
 bridged oxygen atoms in the V6O19 framework. The resulting deoxygenated
 samples enhanced the acetonitrile hydration, while catalyzed the
 dehydration of 2-propanol to propene besides the dehydrogenation reaction,
 probably owing to the newly generated Lewis acid site.
 CC 22-4 (Physical Organic Chemistry)
 Section cross-reference(s): 29, 67
 ST EXAFS selective hydration acetonitrile **catalyst**
 characterization; silica **catalyst** acetonitrile hydration;
 pentamethylcyclopentadienylrhodiumvanadyl oxide **catalyst**
 acetonitrile hydration; FTIR characterization hydration acetonitrile
catalyst
 IT Dehydration, chemical
 Dehydration **catalysts**
 Dehydrogenation
 Dehydrogenation **catalysts**
 Hydration, chemical
 Hydration **catalysts**
 Infrared spectra
 Kinetics of dehydration
 Kinetics of dehydrogenation
 Kinetics of hydration
 (EXAFS/FTIR characterization and selective hydration of acetonitrile on
 silica-supported [(RhCp*)4V6O19])
 IT 1314-62-1, Divanadium pentoxide, uses 12329-09-8
 RL: CAT (Catalyst use); USES (Uses)
 (EXAFS/FTIR characterization and selective hydration of acetonitrile on
 silica-supported [(RhCp*)4V6O19])
 IT 119720-71-7
 RL: CAT (Catalyst use); PEP (Physical, engineering or chemical
 process); PRP (Properties); PROC (Process); USES (Uses)
 (EXAFS/FTIR characterization and selective hydration of acetonitrile on
 silica-supported [(RhCp*)4V6O19])

IT 12329-09-8

RL: CAT (Catalyst use); USES (Uses)
 (EXAFS/FTIR characterization and selective hydration of acetonitrile on
 silica-supported [(RhCp*)4V6O19])

RN 12329-09-8 HCAPLUS

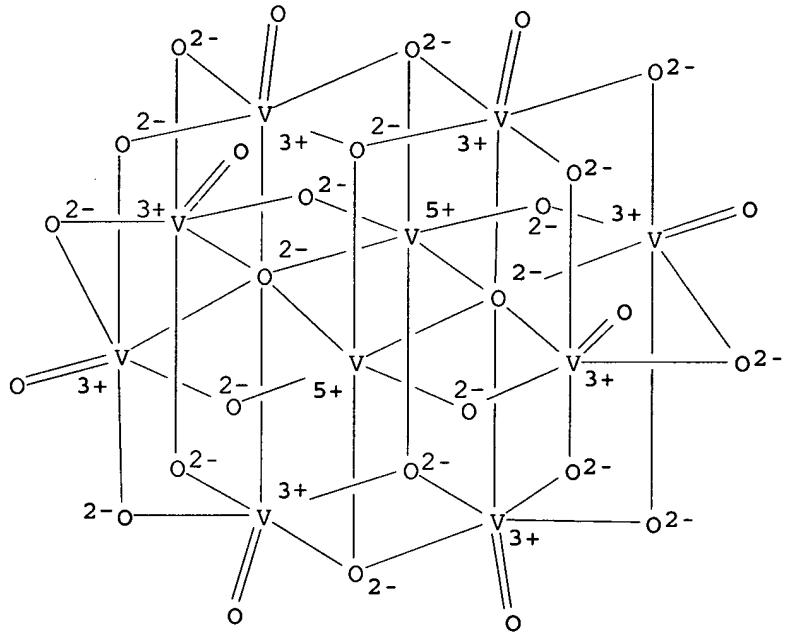
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-
 oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

CMF O28 V10

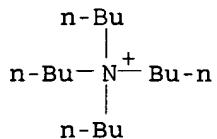
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N



L65 ANSWER 14 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

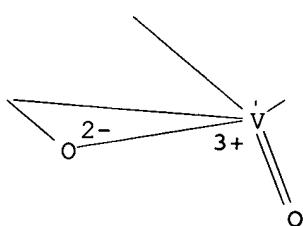
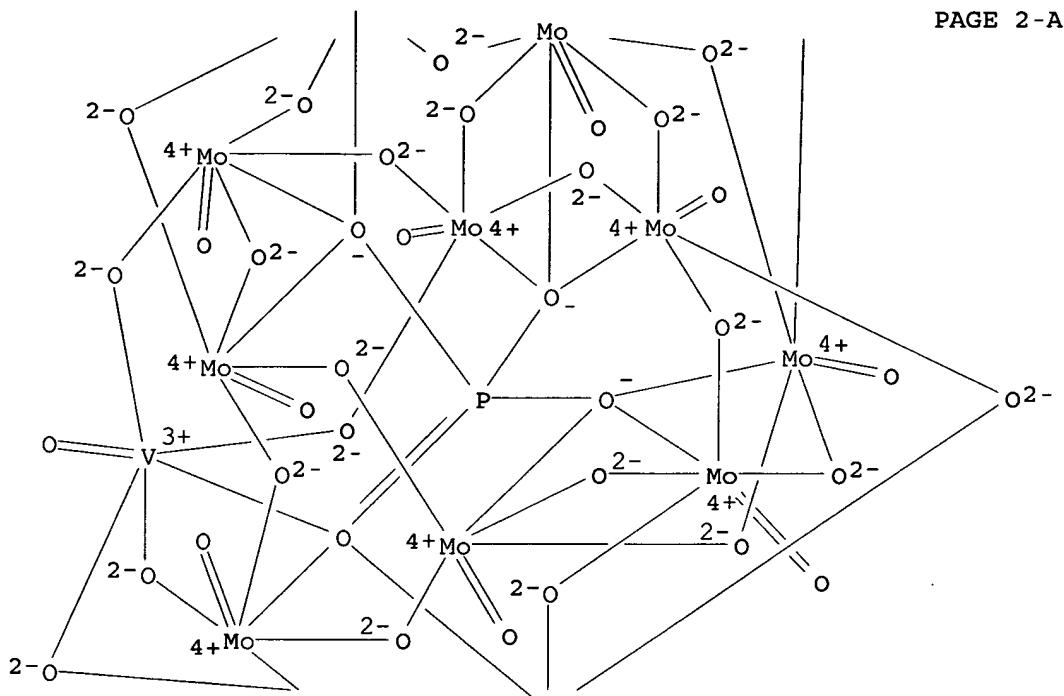
AN 1995:747988 HCAPLUS

DN 123:313421

CM 1

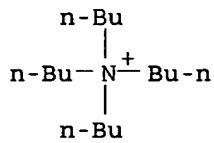
CRN 58071-93-5
 CMF Mo10 O40 P V2
 CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *



CM 2

CRN 10549-76-5
 CMF C16 H36 N



L65 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1994:76763 HCAPLUS
 DN 120:76763
 TI Oxidation of alkylaromatic compounds with hydrogen peroxide catalyzed by mixed addenda Keggin heteropolyanions
 AU Neumann, Ronny; de la Vega, Mauricio
 CS Grad. Sch. Appl. Sci. Technol., Casali Inst. Appl. Chem. Hebrew Univ. Jerusalem, Jerusalem, 91904, Israel
 SO Journal of Molecular Catalysis (1993), 84(1), 93-108
 CODEN: JMCADS; ISSN: 0304-5102
 DT Journal
 LA English
 OS CASREACT 120:76763
 AB Keggin type mixed addenda heteropolyanions containing vanadium atoms such as PV2Mo100405- are shown to be effective **catalysts** for the oxidation of alkylarom. compds. to the resp. acetates or alcs. and aldehydes or ketones using 30% hydrogen peroxide as oxidant. Use of spectroscopic techniques including UV-Vis, IR, vanadium-51 and phosphorus-31 NMR, and ESR shows that the H5PV2Mo10040 compound is not degraded during the catalytic cycle. Oxidation proceeds by homolytic cleavage of H5PV2Mo10040-peroxo intermediates. The resulting hydroperoxy and hydroxy radicals initiate the formation of benzyl radicals which lead to the product formation.
 CC 22-7 (Physical Organic Chemistry)
 Section cross-reference(s): 67
 ST oxidn alkylarom compd hydrogen peroxide catalytic; mixed addenda Keggin heteropolyanion oxidn **catalyst**; acetate; aldehyde; ketone
 IT Oxidation
 Oxidation **catalysts**
 Regiochemistry
 Substituent effect
 (oxidation of alkylarom. compds. with hydrogen peroxide catalyzed by mixed addenda Keggin heteropolyanions)
 IT 58-27-5P, 2-Methyl-1,4-naphthoquinone 66-77-3P, 1-Naphthaldehyde
 66-99-9P, 2-Naphthaldehyde 86-55-5P, 1-Naphthoic acid 93-09-4P,
 2-Naphthoic acid 93-92-5P, 1-Phenylethyl acetate 98-86-2P,
 Acetophenone, preparation 100-52-7P, Benzaldehyde, preparation
 104-21-2P, 4-Methoxybenzyl acetate 104-87-0P, 4-Methylbenzaldehyde
 104-88-1P, 4-Chlorobenzaldehyde, preparation 119-61-9P, Benzophenone,
 preparation 123-11-5P, 4-Methoxybenzaldehyde, preparation 140-11-4P,
 Benzyl acetate 486-25-9P, Fluorenone 529-20-4P, 2-Methylbenzaldehyde
 552-89-6P, 2-Nitrobenzaldehyde 555-16-8P, 4-Nitrobenzaldehyde,
 preparation 619-90-9P, 4-Nitrobenzyl acetate 620-23-5P,
 3-Methylbenzaldehyde 954-67-6P, Diphenylmethyl acetate 1122-91-4P,
 4-Bromobenzaldehyde 2216-45-7P, 4-Methylbenzyl acetate 3425-72-7P
 5406-33-7P, 4-Chlorobenzyl acetate 6630-33-7P, 2-Bromobenzaldehyde
 13098-88-9P 17369-57-2P, 3-Methylbenzyl acetate 17373-93-2P,
 2-Methylbenzyl acetate 21388-92-1P, 4-Bromobenzyl acetate 25017-68-9P
 35480-23-0P 53039-57-9P 77376-01-3P, 2-Nitrobenzyl acetate
 82466-12-4P, 2-Bromobenzyl acetate 152171-78-3P 152469-20-0P
152469-21-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation, oxidation of alkylarom. compds. with hydrogen peroxide catalyzed
 by mixed addenda Keggin heteropolyanions)

IT 152469-21-1P

RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation, oxidation of alkylarom. compds. with hydrogen peroxide catalyzed
 by mixed addenda Keggin heteropolyanions)

RN 152469-21-1 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, hydrogen (heptadeca- μ -
 oxodecaoxodecamolybdate)hepta- μ -oxodioxo[μ 12-[phosphato(3-)-
 κ O: κ O: κ O': κ O': κ O': κ O'':.kappa
 .O'': κ O'': κ O'': κ O'': κ O'': κ O'']]divanadate(5-)
 (4:1:1) (9CI) (CA INDEX NAME)

CM 1

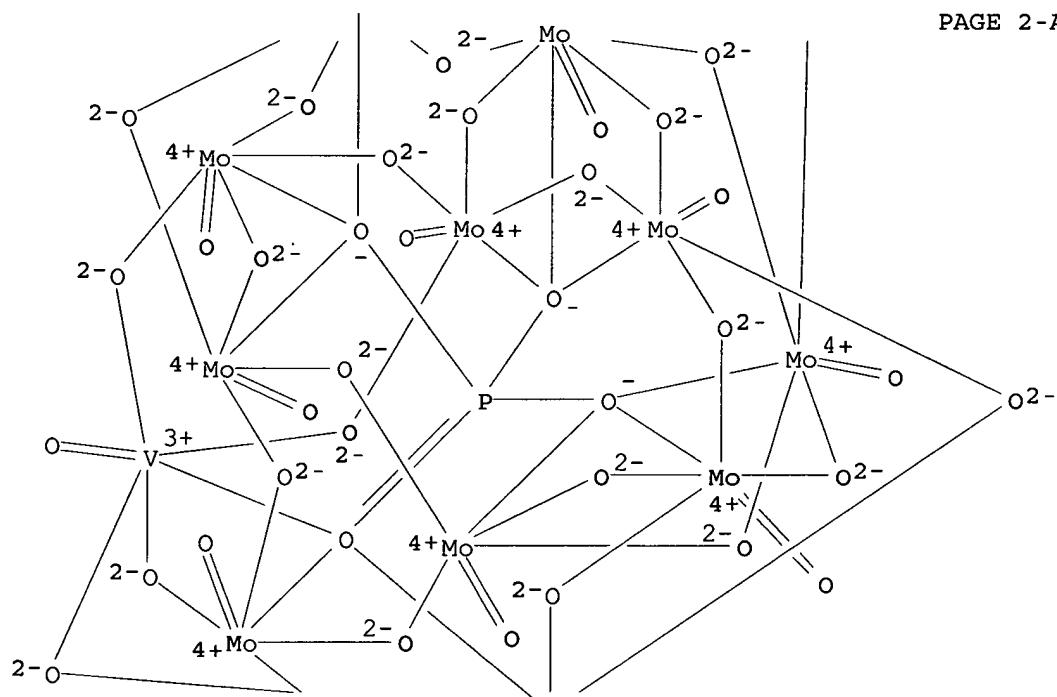
CRN 58071-93-5

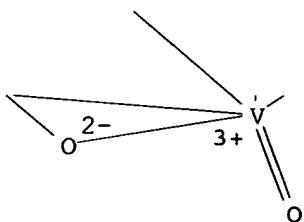
CMF Mo10 O40 P V2

CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

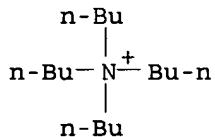
PAGE 2-A





PAGE 3-A

CM 2

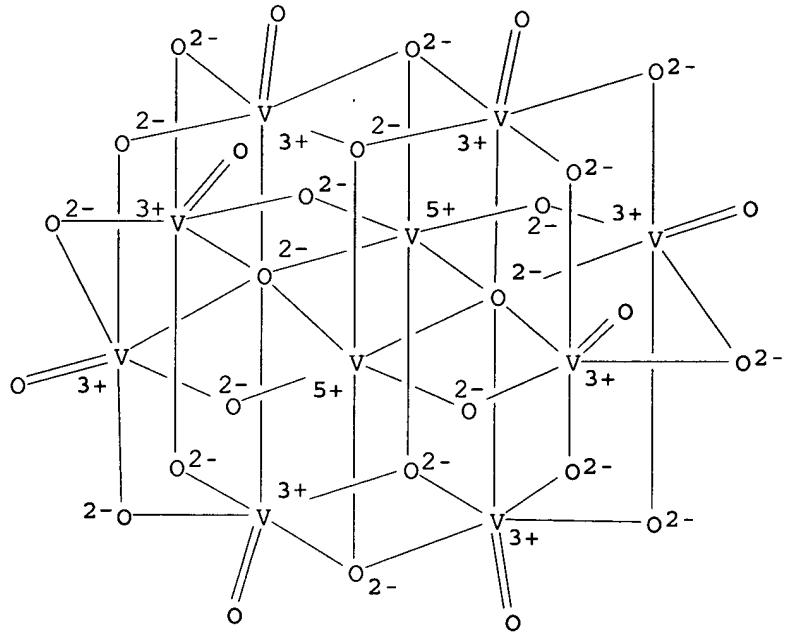
CRN 10549-76-5
CMF C16 H36 N

L65 ANSWER 16 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1992:439086 HCAPLUS
 DN 117:39086
 TI Tridecavanadate, $[\text{V}_{13}\text{O}_{34}]^{3-}$, a new high-potential isopolyvanadate
 AU Hou, Dong; Hagen, Karl S.; Hill, Craig L.
 CS Dep. Chem., Emory Univ., Atlanta, GA, 30322, USA
 SO Journal of the American Chemical Society (1992), 114(14), 5864-6
 CODEN: JACSAT; ISSN: 0002-7863
 DT Journal
 LA English
 AB Refluxing $(\text{Bu}_4\text{N})_3\text{V}_{10}\text{O}_{28}$ in acetonitrile (26 mM) for 7 h under N₂ produces $(\text{Bu}_4\text{N})_3[\text{V}_{13}\text{O}_{34}]$ (1) whereas V. W. Day et al. (1989) established that the diprotonated analog, $(\text{Bu}_4\text{N})_4\text{H}_2\text{V}_{10}\text{O}_{28}$ under similar conditions generates the inclusion complex, $[\text{Me}_3\text{CN} \cdot (\text{V}_{12}\text{O}_{32}4^-)]$. The x-ray structure of 1 which crystallizes in the monoclinic space group P21/c with a 23.156(6), b 11.457(3), c 28.936(7) Å, β 94.02(2)°, and $Z = 4$ with structure refinement of 4906 reflections with $F > 6.0\sigma(F)$ converged at $R = 0.0719$ shows the layered structural motif approximating close-packing and the threefold symmetry of the C₃v mol. The ⁵¹V NMR spectrum of 1 indicates that the solid state structure is maintained in solution (CD₃CN at 25°). 1 Has the lowest charge d. of any polyvanadate and the highest potential of any monometallic isopolyoxometalate reported to date. Ph₃P reduces 1 in wet acetonitrile stoichiometrically, rapidly at 25°, to generate cleanly the corresponding one-electron reduced complex, $[\text{V}_{13}\text{O}_{34}]^{4-}$, 2, and Ph₃PO. Several oxidants including Me₃COOH reoxidize 2 to 1; reoxidn. by O₂ is slow. The oxidation of an exemplary organic substrate, tetrahydrothiophene by Me₃COOH catalyzed by 1 exhibited kcatalyzed by 1/kuncatalyzed, at 70° in CH₃CN = 27.
 CC 78-7 (Inorganic Chemicals and Reactions)
 Section cross-reference(s): 22, 67, 75
 ST crystal structure tridecavanadate; tridecavanadate prepn structure redox; vanadate trideca prepn structure oxidn; catalyst tridecavanadate tetrahydrothiophene oxidn

IT Oxidation catalysts
 (tridecavanadate, for organic substrates)
 IT 12329-09-8P 142005-04-7P, Vanadate (V13O344-)
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT 12329-09-8P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 12329-09-8 HCPLUS
 CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-
 oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

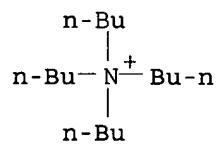
CM 1

CRN 12397-12-5
 CMF O28 V10
 CCI CCS



CM 2

CRN 10549-76-5
 CMF C16 H36 N



L65 ANSWER 17 OF 24 HCPLUS COPYRIGHT 2006 ACS on STN
AN 1991:428470 HCPLUS
DN 115:28470
TI Comparative study of polyoxometalates and semiconductor metal oxides as catalysts. Photochemical oxidative degradation of thioethers
AU Chambers, R. Carlisle; Hill, Craig L.
CS Dep. Chem., Emory Univ., Atlanta, GA, 30322, USA
SO Inorganic Chemistry (1991), 30(13), 2776-81
CODEN: INOCAJ; ISSN: 0020-1669
DT Journal
LA English
AB The photochem. degradation of thioether substrates catalyzed by representative semiconductor metal oxides (anatase TiO₂, SnO₂, cubic WO₃, and CdS) and photoredox-active early-transition-metal polyoxometalates (W100324-PMo12O403-, PW12O403-, SiMo12O404-, PV2Mo10O405-, CuIIW11PO395-, and P2W18O626-) have been examined under both anaerobic and aerobic conditions. Under anaerobic conditions, all the semiconductors are completely ineffective at photochem. oxidizing or degrading the exemplary thioether substrate tetrahydrothiophene (THT) in the oxidatively resistant solvent acetonitrile. In contrast, all the homogeneous polyoxometalate systems under the same reaction conditions, except the neutral tetra-n-butylammonium (Q) salt of PW12O403-, are quite effective. The latter systems generate products derived from the carbon-based radical α to the sulfur atom and not sulfoxide or sulfone, the usual products of thioether oxidation by oxometal species. The rate for the most active anaerobic system, that involving the photochem. degradation of THT by Q4W10032, under optically dilute conditions, is first order in W100324- and light intensity and variable order in THT substrate. A rate law consistent with these data is given. Upon addition of O₂, TiO₂ (with or without Pt(0)) becomes highly active, SnO₂ becomes active, but WO₃ and CdS remain inactive. Reactivity in thioether oxidation is dominated by the interactions of the semiconductors with O₂ and O₂-derived intermediates; there is no correlation between reactivity and semiconductor band gap. Upon addition of O₂, all the polyoxometalate systems become more active. Both the semiconductors and polyoxometalates under aerobic conditions oxidize thioethers further than the sulfoxides or sulfones to a range of products.
CC 22-7 (Physical Organic Chemistry)
ST thioether photooxidn kinetics mechanism; polyoxometalate catalyst photooxidn; semiconductor metal oxide catalyst photooxidn
IT Sulfides, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photochem. degradation of, in presence of semiconductor metal oxide and photoredox-active early-transition metal polyoxometalates as catalysts)
IT Photolysis catalysts
(semiconductor metal oxides and photoredox-active early-transition metal polyoxometalates, for tetrahydrothiophene)
IT Oxidation catalysts
(photochem., semiconductor metal oxides and photoredox-active early transition metal polyoxometalates, for thioethers)
IT 1306-23-6, Cadmium sulfide, uses and miscellaneous 1314-35-8, Tungsten trioxide, uses and miscellaneous 12293-21-9 13463-67-7, Titanium dioxide, uses and miscellaneous 18282-10-5, Tin dioxide 53749-36-3 53749-37-4 59138-97-5 68109-03-5 110294-54-7 134360-58-0 134360-59-1
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for photolysis of tetrahydrothiophene)
IT 110-01-0, Tetrahydrothiophene

RL: RCT (Reactant); RACT (Reactant or reagent)
 (photolysis of, semiconductor metal oxides and photoredox-active
 early-transition metal polyoxometalates as catalyst for)

IT 134360-58-0

RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for photolysis of tetrahydrothiophene)

RN 134360-58-0 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, (heptadeca- μ -
 oxodecaoxodecamolybdate)hepta- μ -oxodioxo[μ 12-[phosphato(3-)-
 κ O: κ O: κ O': κ O': κ O': κ O'': κ O'':.kappa
 .O'': κ O'': κ O'': κ O'': κ O'':.kappa] μ 12-[divanadate(5-)] (5:1)
 (9CI) (CA INDEX NAME)

CM 1

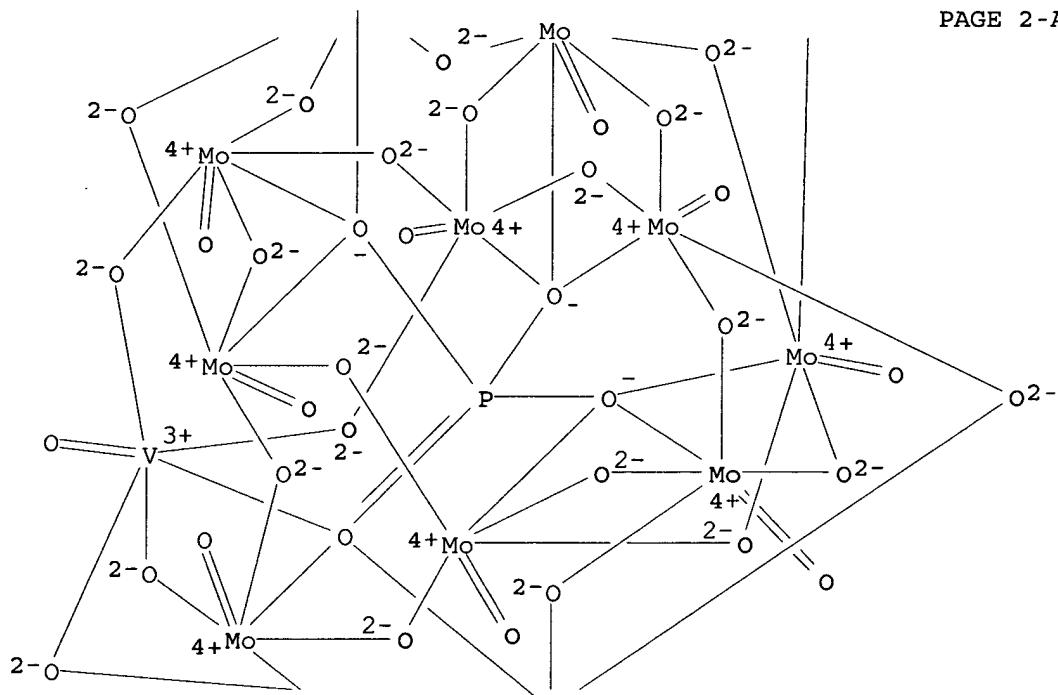
CRN 58071-93-5

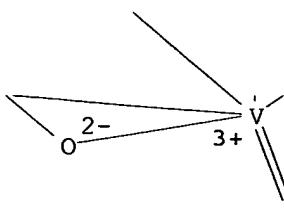
CMF Mo10 O40 P V2

CCI CCS

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

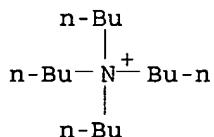
PAGE 2-A





PAGE 3-A

CM 2

CRN 10549-76-5
CMF C16 H36 N

L65 ANSWER 18 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1990:179313 HCAPLUS
 DN 112:179313
 TI Oxidation of cyclohexene with tert-butyl hydroperoxide catalyzed by transition metal oxide clusters
 AU Zhang, Cuiju; Ozawa, Yoshiki; Hayashi, Yoshihito; Isobe, Kiyoshi
 CS Inst. Mol. Sci., Myodaiji, 444, Japan
 SO Journal of Organometallic Chemistry (1989), 373(2), C21-C25
 CODEN: JORCAI; ISSN: 0022-328X
 DT Journal
 LA English
 OS CASREACT 112:179313
 AB Organometallic oxide clusters $[(\text{RhCp}')_4\text{V}_6\text{O}_19]$ ($\text{Cp}' = \eta^5\text{-C}_5\text{Me}_5$) and $[(\text{RhCp}')\text{Cl}(\text{MeCN})_2]_2[\text{Mo}_6\text{O}_19]$ (I) catalyze the oxidation of cyclohexene with tert-Bu hydroperoxide to give allylic oxidation products mainly and epoxycyclohexane selectively, resp. Complex I was prepared and characterized by an x-ray crystal structure determination
 CC 29-11 (Organometallic and Organometalloidal Compounds)
 Section cross-reference(s): 24, 75
 ST oxidn cyclohexene hydroperoxide catalytic; metal oxide cluster oxidn catalyst; rhodium molybdate prepn crystal structure; mol structure dirhodium molybdate
 IT Oxidation catalysts
 (transition metal oxide clusters, for cyclohexene with tert-Bu hydroperoxide)
 IT 12329-09-8 12354-85-7 12390-22-6 119720-71-7
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, for oxidation of cyclohexene with tert-Bu hydroperoxide)
 IT 12329-09-8
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, for oxidation of cyclohexene with tert-Bu hydroperoxide)
 RN 12329-09-8 HCAPLUS

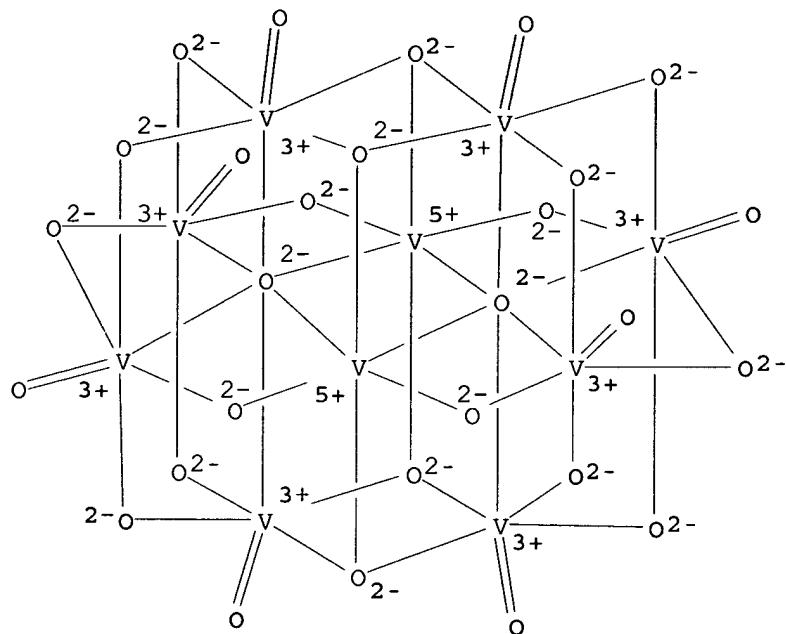
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

CMF O28 V10

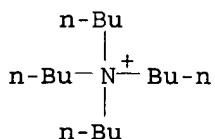
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N



L65 ANSWER 19 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1989:477319 HCAPLUS

DN 111:77319

TI High catalytic activity of vanadium(V) oxo polymers for oxidative cleavage of catechol

AU Nishida, Yuzo; Kikuchi, Hideki

CS Fac.Sci., Yamagata Univ., Yamagata, 990, Japan

SO Zeitschrift fuer Naturforschung, B: Chemical Sciences (1989), 44(2),

245-7

CODEN: ZNBSN; ISSN: 0932-0776

DT Journal

LA English

AB Some vanadium(V) oxo polymers such as *cis*-V₂W₄O₁₉4- and V100286- exhibit high catalytic activities for the oxidative cleavage of 3,5-di-tert-butylcatechol. A chelated species of catechol to two vanadium atoms has been assumed as an active intermediate based on the spectroscopic results.

CC 22-7 (Physical Organic Chemistry)

Section cross-reference(s): 67

ST oxidative ring cleavage dibutylcatechol oxovanadium; vanadium oxo polymer catalyst; catechol dibutyl oxidative cleavage catalytic

IT Ring cleavage catalysts

(oxidative, vanadium oxo polymers, for di-tert-butylcatechol)

IT 3153-26-2 59858-44-5 101247-98-7 121955-81-5

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for oxidative cleavage of di-tert-butylcatechol)

IT 59858-44-5

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for oxidative cleavage of di-tert-butylcatechol)

RN 59858-44-5 HCAPLUS

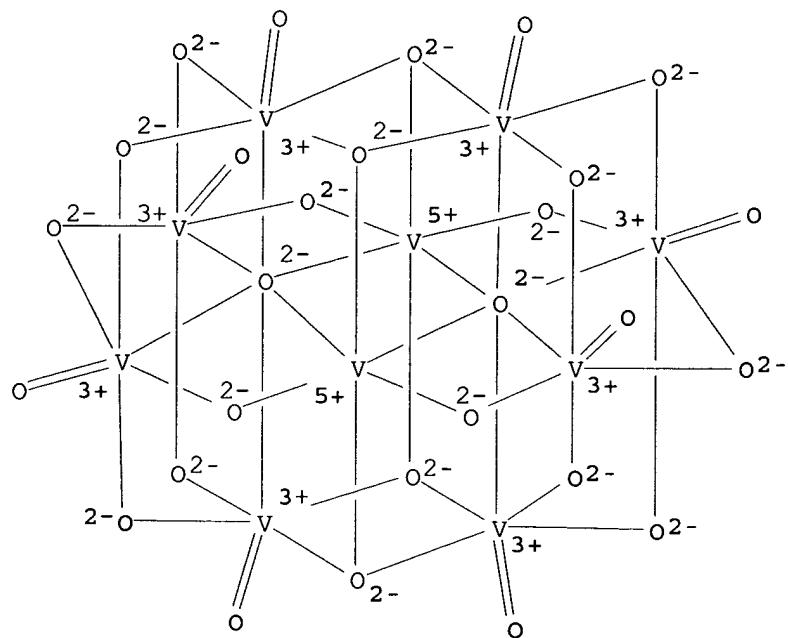
CN 1-Butanaminium, N,N,N-tributyl-, tetradeca- μ -oxo-tetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (6:1) (9CI) (CA INDEX NAME)

CM 1

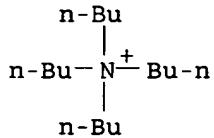
CRN 12397-12-5

CMF O28 V10

CCI CCS



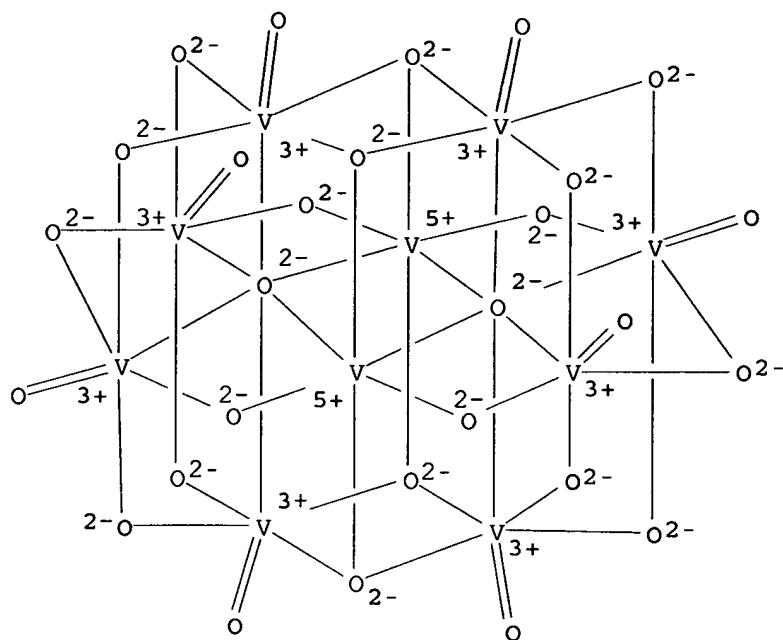
CM 2

CRN 10549-76-5
CMF C16 H36 N

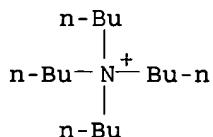
L65 ANSWER 20 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1989:23078 HCAPLUS
 DN 110:23078
 TI Oxidation of catechols catalyzed by heteropolyvanadates
 AU Tatsuno, Y.; Nakamura, C.; Saito, T.
 CS Fac. Eng. Sci., Osaka Univ., Osaka, 560, Japan
 SO Studies in Organic Chemistry (Amsterdam) (1988), 33 (Role Oxygen Chem. Biochem.), 321-4
 CODEN: SOCHDQ; ISSN: 0165-3253
 DT Journal
 LA English
 OS CASREACT 110:23078
 AB Tetrabutylammonium salts of heteropolyvanadate and isopolyvanadate efficiently catalyze the oxidation of 3,5-di-tert-butylcatechol (I) and 4,6-di-tert-butylpyrogallol with dioxygen just as VO(acac)₂. Based on the ¹⁸⁰ isotopic labeling expts. and the reaction intermediate complex formed from heteropolyvanadate and I under dinitrogen, the reaction mechanism is proposed and compared with that of VO(acac)₂-catalyzed oxidation of I.
 CC 22-7 (Physical Organic Chemistry)
 IT Oxidation catalysts
 (heteropolyvanadates, for catechols)
 IT 3153-26-2 12329-09-8 80243-45-4 80243-47-6 113443-80-4
 113443-81-5 113443-82-6
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for oxidation of di-tert-butylcatechol)
 IT 12329-09-8
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for oxidation of di-tert-butylcatechol)
 RN 12329-09-8 HCAPLUS
 CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5
CMF O28 V10
CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N

L65 ANSWER 21 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1985:487335 HCAPLUS
 DN 103:87335
 TI Catalytic photochemical dehydrogenation of organic substrates by polyoxometalates
 AU Hill, Craig L.; Bouchard, Donald A.
 CS Dep. Chem., Emory Univ., Atlanta, GA, 30322, USA
 SO Journal of the American Chemical Society (1985), 107(18), 5148-57
 CODEN: JACSAT; ISSN: 0002-7863
 DT Journal
 LA English
 AB The photochem. behavior of polyoxometalates (POM) based on W, Mo, V, Nb and Ta in the presence of H₂O or 1 of a variety of organic substrates (including alcs., amides, ethers, aldehydes, carboxylic acids, nitriles, ketones and ureas) is examined. Irradiation of the charge-transfer bands of POM dissolved in organic media at 25° leads in most cases to oxidation of the organic substrate and reduction of the POM. The POM fall into 3 categories defined by their thermal and photochem. redox chemical in the presence of organic substrates. Type I complexes, exemplified by those of Nb and Ta, do

not photooxidize any organic substrate upon irradiation. Type II complexes, exemplified by decavanadate and most heteropoly- and isopolytungstates, and Type III complexes, exemplified by most heteropoly- and isopolytungstates, do not oxidize a wide range of organic substrates upon irradiation. Reoxidn. of the reduced forms of the Type II complexes, either by reaction with O₂ or by evolution of H₂, is kinetically or thermodynamically unfavorable; analogous reoxidn. of the reduced forms of the Type III complexes is not. Several factors affecting the quantum yields for production of reduced POM are outlined, and the energetic features regarding H₂ evolution are discussed. The IR, UV, and ³¹P, ¹⁸³W and ¹⁷⁰NMR spectral properties of α -H₃PW₁₂O₄₀.6H₂O (I) and other POM remain the same before and after catalytic photochem. dehydrogenation of representative alc., ether or amide substrates. Little if any POM decomposition occurs during the photoredox chemical interactions between organic substrates and POM have profound effects on the electronic structure of the POM. The charge-transfer transitions of I display different sensitivities to medium in the low-energy ($\lambda > 300$ nm) vs. high-energy region of the UV-visible spectral range. The highest quantum yields for photoredox chemical involving organic substrates and I are observed in the low-energy or absorption-tail region. One possible model explaining the wavelength dependence of the absorption and photochem. action spectra is discussed. A general mechanism in agreement with all the exptl. data is proposed for organic substrate oxidation and the effective capture of light energy in these POM-organic substrate systems.

CC 22-7 (Physical Organic Chemistry)
 ST photochem dehydrogenation polyoxometalate catalyst; NMR
 polyoxometalate; redox photochem polyoxometalate
 IT Alcohols, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photochem. dehydrogenation of, by polyoxometalates with platinum catalysts)
 IT Dehydrogenation catalysts
 (photochem., platinum compds., for organic compds. by polyoxometalates)
 IT 7440-06-4, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for dehydrogenation of organic compds. by polyoxometalates)
 IT 12026-57-2 12329-10-1 53749-36-3 53749-37-4 68184-32-7
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photochem. dehydrogenation by, of organic comds. in presence of platinum catalysts)
 IT 1343-93-7 12142-54-0 59858-44-5 92762-45-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photochem. dehydrogenation by, of organic compds. in presence of platinum catalysts)
 IT 12027-38-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photochem. dehydrogenation by, of organic compds. with platinum catalysts)
 IT 64-17-5, reactions 64-19-7, reactions 67-64-1, reactions 67-68-5,
 reactions 68-12-2, reactions 75-12-7, reactions 78-84-2 100-47-0,
 reactions 100-52-7, reactions 107-12-0 109-99-9, reactions
 127-19-5 632-22-4 680-31-9, reactions 872-50-4, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photochem. dehydrogenation of, by polyoxometalates with platinum catalysts)
 IT 7732-18-5, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with polyoxometalates in presence of platinum catalysts)

IT 59858-44-5

RL: RCT (Reactant); RACT (Reactant or reagent)
 (photochem. dehydrogenation by, of organic compds. in presence of platinum
 catalysts)

RN 59858-44-5 HCAPLUS

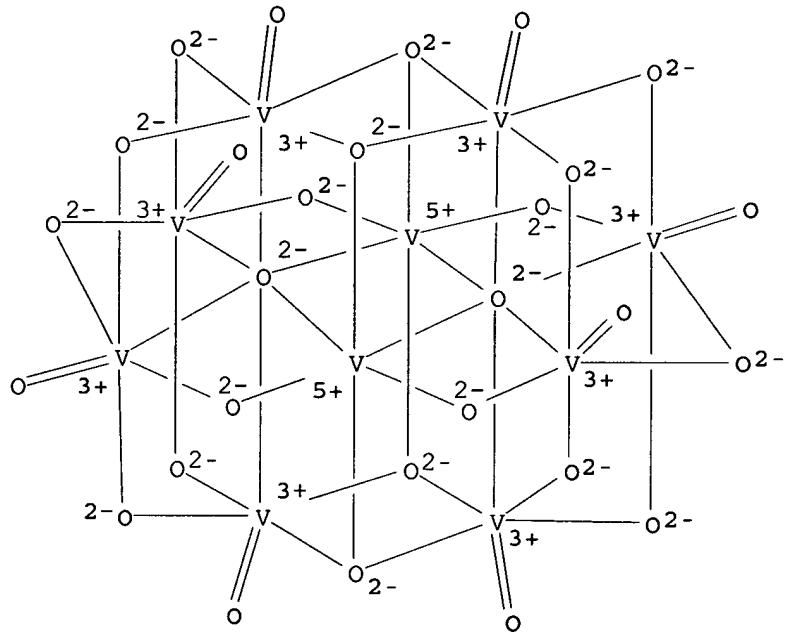
CN 1-Butanaminium, N,N,N-tributyl-, tetradeca- μ -oxo-tetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (6:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

CMF O28 V10

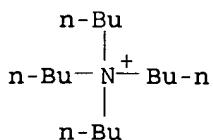
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N

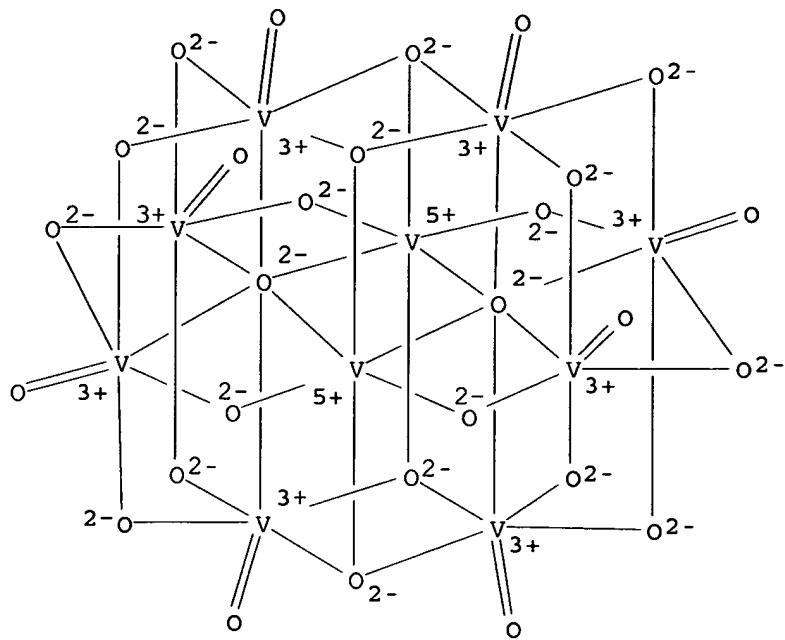


L65 ANSWER 22 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

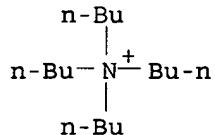
AN 1978:37175 HCAPLUS

DN 88:37175

TI Use of oxo-metallic derivatives in isomerization. Reactions of unsaturated alcohols
 AU Chabardes, P.; Kuntz, E.; Varagnat, J.
 CS Cent. Rech. Carrières, Rhône-Poulenc Ind., Saint-Fons, Fr.
 SO Tetrahedron (1977), 33(14), 1775-83
 CODEN: TETRAB; ISSN: 0040-4020
 DT Journal
 LA English
 AB Vanadate esters, $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}$ $\text{Mo}(\text{C}_4\text{H}_{10}\text{O}_6)$, NH_4ReO_4 , $(\text{NH}_4)_10\text{W}_{12}\text{O}_{41} \cdot 7\text{H}_2\text{O}$ and $\text{OW}(\text{OSiPh}_3)_4$ catalyzed the isomerization of α -acetylenic and α -ethylenic alcs. to ethylenic carbonyl derivs. and allyl alcs., resp. The vanadate esters are particularly efficient. E.g., dehydrolinalol with vanadyl acetylacetone at 170° for 35 min gave 41% citral. Reaction mechanisms are proposed.
 CC 23-7 (Aliphatic Compounds)
 ST vanadate catalyst isomerization unsatd alc; alkynol isomerization vanadate catalyst; alkenol isomerization vanadate catalyst
 IT Isomerization catalysts
 (vanadate esters, for unsatd. alcs.)
 IT 1686-23-3 3153-26-2 3473-84-5 5590-56-7 7803-55-6 11120-25-5
 12027-67-7 12329-09-8 15364-25-7 18822-50-9 19120-62-8
 25694-90-0 54465-25-7 55397-36-9 58832-11-4 60647-17-8
 65234-94-8 65234-95-9 65234-96-0 65291-17-0
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, for isomerization of unsatd. alcs.)
 IT 11099-11-9
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, with alumina, for isomerization of dehydrolinalol)
 IT 108-93-0, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, with ammonium vanadate and analogs. for isomerization of unsatd. alcs.)
 IT 75-65-0, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, with triethanolamine vanadate for isomerization of unsatd. alcs.)
 IT 1344-28-1, uses and miscellaneous
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, with vanadium oxide, for isomerization of dehydrolinalol)
 IT 12329-09-8
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst, for isomerization of unsatd. alcs.)
 RN 12329-09-8 HCPLUS
 CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)
 CM 1
 CRN 12397-12-5
 CMF O28 V10
 CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N

L65 ANSWER 23 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1976:135888 HCAPLUS

DN 84:135888

TI Ethylenic carbonyl compounds

IN Chabardes, Pierre; Querou, Yvon

PA Rhone-Poulenc S. A., Fr.

SO U.S., 11 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 3920751	A	19751118	US 1971-208917	19711216
PRAI US 1968-779633	A1	19681127		

AB About 25 catalysts from Nb, V, W, Re, and Mo were prepared and used for the isomerization of 17 β -acetylenic alcs., aldehydes or ketones. For example, NH_4VO_3 was refluxed with cyclohexanol to give cyclohexyl orthovanadate, which (1 g) was used for the isomerization of 20

g dehydrolinalool to give 6.09 g citral.

IC C07C

INCL 260601000R

CC 30-40 (Terpenoids)

Section cross-reference(s): 23

ST isomerization **catalyst** acetylenic alc; vanadium isomerization
catalyst; molybdenum isomerization **catalyst**; tungsten
isomerization **catalyst**; rhenium isomerization **catalyst**
; niobium isomerization **catalyst**

IT Isomerization **catalysts**

(from metals of Groups Vb, VIb, and VIIb for acetylenic alcs.)

IT 1314-35-8 3153-26-2 7439-98-7D, Molybdenum, compds. 10026-12-7

11099-11-9 12054-85-2 13598-65-7 15364-25-7 25578-33-0

25578-34-1 25578-35-2 25578-36-3 25578-37-4 32673-55-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(**catalysts** for isomerization of acetylenic alcs.)

IT 1686-22-2 1686-23-3 1686-24-4 12207-63-5 **12329-09-8**

19120-62-8 24910-41-6 25578-29-4 25578-30-7 25611-91-0

25694-90-0 25694-90-0

RL: CAT (Catalyst use); USES (Uses)

(**catalysts**, for isomerization of acetylenic alcs.)

IT **12329-09-8**

RL: CAT (Catalyst use); USES (Uses)

(**catalysts**, for isomerization of acetylenic alcs.)

RN 12329-09-8 HCPLUS

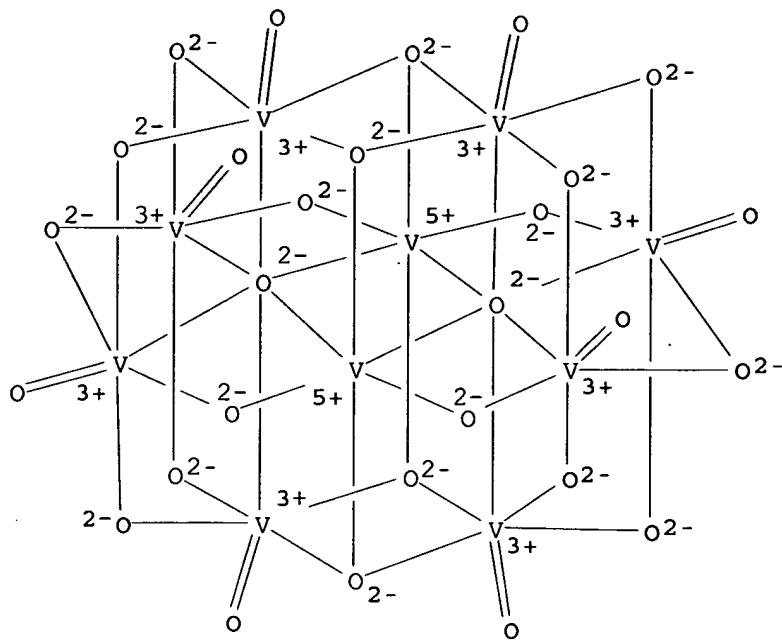
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ 3-
oxodi- μ 6-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

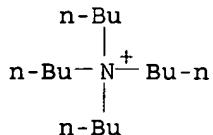
CMF O28 V10

CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N



L65 ANSWER 24 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1973:136466 HCAPLUS
DN 78:136466
TI Catalytic manufacture of α -ethylene carbonyl compounds
IN Chabardes, Pierre; Querou, Yvon
PA Societe des usines chimiques de Rhone-Poulenc
SO Fr. Addn., 12 pp. Addn. to Fr. 1,554,805 (CA 72;43923g).
CODEN: FAXXA3

CDEN: FAXAS
DT Patent
LA French
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

PI FR 96548 19721020 FR 1968-178670 19681217
 AB Acetylenic alcs. HC#C=C\CC(O)R1 ($R = Me$, $R1 = CH2CH2CH:CM2$, $CH2CH2CH:CM2CH2CH2-CH:CM2$, $(CH2)5Me$, $CHMeCH2CH:CM2$, $CHEtCH2CH:CM2$; $R = Et$, $R1 = CHMeCH2CH:CM2$; $R = Pr$, $CH2CHMe2$, $R1 = CH2CH2CH:CM2$) were rearranged catalytically to aldehydes $RR1C:CHCHO$. $Me2C:CHCO(CH2)4Me$, and $MeCH:-CHCO(CH2)3Me$ were similarly prepared. Suitable catalysts

were NH₄ metavanadate, (NBu₄)₃H₃V10O₂₈, cyclohexyl orthovanadate, NH₄ molybdate, NH₄ perrhenate, NbCl₅, WO₃, [Me₂CH(CH₂)₃C-MeEtO] 3VO.

IC C07C

CC 30-10 (Terpenoids)

Section cross-reference(s): 23

ST alkynol isomerization; alkenal; vanadate catalyst alkynol isomerization; molybdate catalyst alkynol isomerization; rhenate catalyst alkynol isomerization

IT Rearrangement catalysts

(ammonium metavanadate, molybdate and perrhenate for acetylenic carbinols)

IT 1314-35-8 7803-55-6 10026-12-7 12054-85-2 12329-09-8

13598-65-7 24910-41-6 25578-37-4

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for rearrangement of dehydrolinalool)

IT 12329-09-8

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for rearrangement of dehydrolinalool)

RN 12329-09-8 HCPLUS

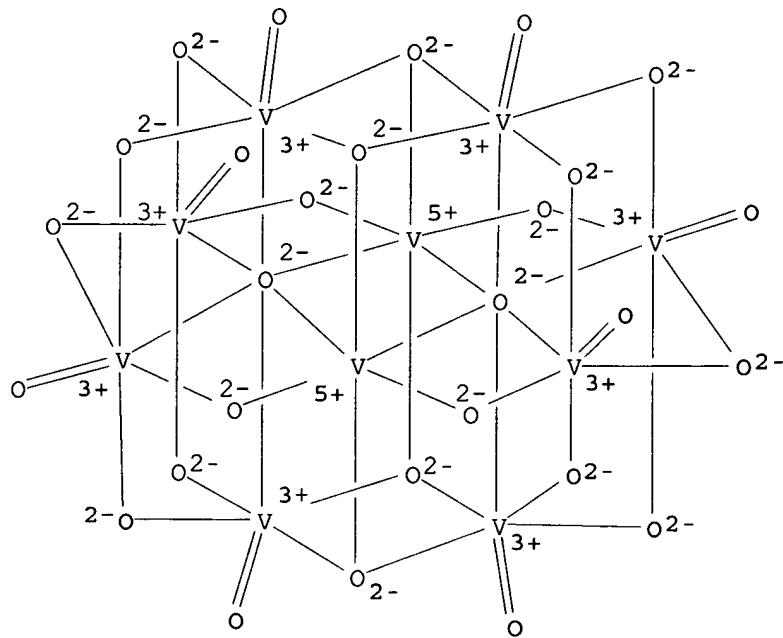
CN 1-Butanaminium, N,N,N-tributyl-, hydrogen tetradeca- μ -oxotetra- μ ³-oxodi- μ ⁶-oxooctaoxodecavanadate(6-) (3:3:1) (9CI) (CA INDEX NAME)

CM 1

CRN 12397-12-5

CMF O28 V10

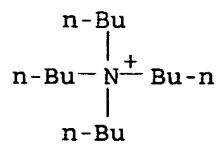
CCI CCS



CM 2

CRN 10549-76-5

CMF C16 H36 N



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